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THE improvement of the passenger terminals of the Pennsylvania Railroad at Philadelphia, decided on last year, as explained in the company's annual report (*Railway Age Gazette*, March 10, page 449), will cost from \$20,000,000 to \$25,000,000, according to the report of the special committee entrusted with the preparation of the plans. The larger part of this money is to go for the electrification of the passenger lines within the suburban district (which extend in six different directions); but the most radical change, as affecting the public, is that indicated by the announcement that through passenger trains will be dealt with at West Philadelphia, where a new station is to be built. The great Broad street station, with its costly approach line, is to

be devoted mainly or wholly to local and suburban passenger service, the least profitable part of the traffic. For 30 years and more the people of Philadelphia have kept up a persistent and almost continuous contest to prevent the Broad street station, in the heart of the city, from being "put on a branch," and the railway company has spent millions of dollars to meet the people's wishes in the matter, but it looks as though those wishes were doomed at last to be overborne by the sheer force of the enormous increase in traffic.

THE granting of local self-government to the leased Boston & Albany, as announced by the president of the New York Central a month ago, went into effect last Monday, Mr. Hustis being appointed a vice-president of the New York Central. The other promotions and changes in title are given in our news columns. The extent of the authority given to Mr. Hustis is indicated by the clause in the agreement with the New Haven road, which says that he is to appoint such assistants and subordinates as may be necessary. In other words, he has a free hand in organizing his staff. Officers of the operating, traffic, mechanical, purchasing and accounting departments, who have heretofore reported to a superior in New York City, will now report to Vice-President Hustis. The only specific reason for this change mentioned in the vice-president's interview in the *Boston Transcript*, is that better relations with the shippers along the line are expected to result, but probably there are other and undefined relations that will be ameliorated. The New York Central has to treat the Massachusetts stockholders and citizens as the British Empire treats the people of Canada or South Africa—let them have their own way as fully as a prudent regard for their own prosperity will permit. Mr. Hustis says that the details of the trackage and other contracts with the New Haven will now be speedily arranged, this work having been deferred, apparently, until the men who must do the negotiating should have complete authority. The division of authority under the new organization is outlined in an official circular as follows, the officers indicated by a star being, practically, the same as heretofore, both as regards the incumbents and the duties:

Traffic Manager. In charge of freight and passenger traffic; also matters having to do with mail and express traffic.

**Counsel.* In charge of legal matters, real estate, taxes and insurance.

**General Superintendent.* In charge of transportation, including movement of trains, operation of yards, stations, block signals, etc.

**Chief Engineer.* In charge of engineering, maintenance of way and structures.

Auditor. In charge of accounting and all statistical matters.

Superintendent Motive Power and Rolling Stock. In charge of motive power and equipment, including locomotive and car shops, and tools and machinery in connection with the motive power and car departments.

Purchasing Agent. In charge of purchases of materials and supplies as may be designated by the vice-president.

Superintendent Car Service. In charge of car accounting, demurrage and freight car distribution.

WHILE the returns for taxation of the railways of the country for the year 1910 show some variation, and are incomplete, there can hardly be a doubt that they will be upwards of \$110,000,000 as contrasted with \$82,377,619 in 1908, and \$90,790,949 in 1909. Their increase for 1910 is, absolutely, considerably more than double that for the previous year, which was itself a year of exceptional increase. New tax laws require time—usually from a year to eighteen months, in the case of states—for their operation, and thus their full sweep with the result of the actual additions was not reached until 1910. To the state increments the federal corporation tax must, of course, be added; and now that it has passed its constitutional test one can hardly doubt its fixity. Indeed, the prophecy does not go far astray that counts this new federal impost as a kind of elastic "plug" to fit future annual holes in the treasury budget, which holes have not in the past shown tendencies to smaller diameters. However, that may be, the sharp upward curve of railway taxation, chiefly by states, deserves attention. It has been

obscured by the more pressing factors of operation, maintenance improvements, wages and new financing. But the tax item has certain vivid qualities of its own. It is inexorable and hard to combat in the courts. It is easily increased by legislatures, with their constantly waxing tendency to stiff taxation from the individual to the corporation. It has a kind of inherent trait of never going backward; and it lends itself to a variety of forms that obscures its burden until the tax bill actually comes in. In the immediate future, however, some of the railway companies have one minor consolation: A good many of them are taxed on market values of stock. As states by adverse legislation beat down market values of railway shares, they must beat down the basis of taxation too. And, as an ultimate dictum, valuations cannot be indefinitely reduced and taxation indefinitely expanded. There is a ratio between the two which courts must recognize, even if state legislatures and commissions do not.

THE RAILWAYS OF THE WORLD.

THE census of the railways of the world which the *Archiv für Eisenbahnwesen* compiles yearly is brought down to the year 1909 in its last issue. There were then in the whole world 625,698 miles, not including street railways, trolley lines and other light structures. The *Archiv* gives the mileage in each country. We present it for the grand divisions of the old and new worlds, as follows:

	Miles.		Miles.
Europe	204,904	North America	277,015
Asia	61,800	South America	42,329
Africa	20,809	Australasia	18,849
Old World	287,513	New World	338,185

Thus of the total mileage, 54 per cent. is in the new world, North America alone having 10,000 miles more than Europe and Asia together, which latter have over 1,250 millions of inhabitants, against 115 million in North America.

More than half of the railways of the world have been built since 1886—an average of 13,600 miles per year.

This rate of growth has been, on the whole, comparatively stable of late years. The increase was 14,144 miles in 1909 and 62,800 miles for the four years then ending. Even these figures, however, do not adequately show the enormous absorption of capital in these implements of production, for in this country of late years, and in Europe for a much longer period, much more has been expended in improving existing railroads than for additions to mileage.

The mileage added in the different continents in 1909 and in the four years then ending has been:

	1909.	Four years.		1909.	Four years.
Europe	2,528	12,359	North America	4,143	25,057
Asia	2,986	11,197	South America	1,816	8,273
Africa	1,789	4,518	Australasia	882	1,396
Old World	7,303	28,074	New World	6,841	34,726

We see here that in the last year more railway was built in Asia than in Europe, and in the last four years nearly as much. Here British India, with Ceylon, has more than half the mileage, but Russia built most in 1909, opening a line 1,258 miles long in Central Asia. China had in 1909 no less than 5,277 miles of railway, and 3,050 miles of it were built in the last four years. Japan, with the lines it has built in Coréa, has a little more than China, but it opened but 45 miles of new line in 1909. China now seems to be one of the great fields for railway building.

There is notable activity in Africa. In the older civilized parts—Algiers, Tunis and Egypt, the additions have not been great in the last four years, but in that time the British South Africa Union, as it is now called, has increased its mileage by 44 per cent. and 2,729 miles, and it has now more railroad than any other two countries in Africa. A number of lines have been built from the coast inland by the Germans, French and Portuguese, as well as by the English, through districts where there is no white

population to speak of. A number of these lines have been mentioned in notes in these columns.

In North America, Canada and Mexico have increased their mileage proportionately more than the United States, but our mileage is already so great, that a small percentage makes a large amount. As has been said, the great railroad work here has been the improvement of old lines.

In South America the 8,273 miles added in the last four years is an increase of more than 24 per cent. It should be said that Central America and the West Indies are reckoned with South America, which is geographically incorrect. Except in Cuba, the mileage is inconsiderable. The islands together have 3,340 miles of line, and 1,160 miles more than in 1905. The Argentine Republic has more than a third of the railways in South America, and its mileage grew from 12,425 in 1905 to 15,854 in 1909. Brazil comes next, with 10,444 miles in 1905 and 13,000 (exactly) in 1909. Argentina receives a large immigration; Brazil much less; the other South American countries scarcely any.

For about 88 per cent. of the European railways and 81 per cent. of the others the *Archiv* gives figures for the capital invested in them, which is an average of \$121,900 per mile in Europe, and \$66,300 for the rest of the world; but as it makes the capital of the United States railways \$73,880, instead of \$59,259, the true amount, this latter must be taken with a grain of salt, amounting in this country to \$3,573,000,000. Allowing for this the average for the non-European lines is about \$9,750 less than \$66,300, or \$56,550 per mile. Reckoning the capital of the lines not reported at these rates, the world's total investment in railways in 1909 amounted to about \$51,600,000, which is about \$33 for each inhabitant thereof.

THE RAILWAYS AND THE EXPRESS COMPANIES.

THERE was good reason in the earlier history of the railways of the United States why they should turn the handling of express over to separate companies. Most of the roads were then short lines. The small packages which form express traffic needed expedited movement; and if each of the numerous small roads had handled them itself the time lost in transfers at junctions would have seriously impaired the service. The expense of handling express matter would also have been greater if each road had had its own wagons and teams for collection and delivery and its own employees for handling it both en route and at terminals. In the early days the handling of express by separate companies also was a protection to the earnings of the railways. Their freight and passenger rates and revenue were constantly demoralized by excessive competition, and the same thing would have happened to their revenue from express if it had been dealt with as merely a part of their regular traffic.

The reasons for having express handled by separate companies are neither so numerous nor so strong now as they were formerly. Most of our railways have grown from short lines into great systems, and some of the Hill lines, the Canadian Pacific and some other roads, now own absolutely the express concerns that operate over their lines. The day of cut-throat competition is past, and, of course, express rates, if the railways handled express themselves, would not now be any more subject to the vicissitudes of competition than freight and passenger rates are.

There are, however, still reasons why express should continue to be dealt with by distinct organizations. There are but two railways in the United States, the Atchison and the Chicago, Milwaukee & St. Paul (with its subsidiary, the Puget Sound), which extend as far east as Chicago and as far west as the Pacific coast. There is but one, we believe—the Wabash—which extends both east of Chicago and west of the Mississippi river. If each railway did its own express business there might be caused some added delay, trouble and expense in making transfers at junction points between different railway systems. Additional expense would also be caused by the necessity for each railway to provide its own facilities for handling express at terminals. At Chicago, for example, which is entered by 26 roads, there would be a very

great multiplication of express offices, of facilities for collection and delivery, etc. This would involve economic waste and this loss we may be sure ultimately would have to be met by the rates charged.

But it does not follow that express should continue to be handled under such contracts or by the same companies as now. The present system of dividing the gross earnings from express between express companies and the railways over whose lines they operate seems to have grown objectionable. If any spokesman of the express companies can make a good defense of it the *Railway Age Gazette* will be very glad to give space to it. But we have never yet seen nor heard such a defense. The service rendered by the express companies is mainly a terminal service, that of collection and delivery. The division of the earnings from short hauls on a percentage basis may work out fairly; for when the haul of the railway is relatively short the service rendered by the express company in collecting and delivering a package may equal in cost and value the service rendered by the railway in transporting it. But what justification can there be for dividing equally the revenue derived from handling a package from New York to Chicago, from Chicago to Galveston, or from New York to San Francisco? The cost and value of the service rendered by the railway increases almost in proportion to distance, for there is relatively little railway terminal expense to be covered. But the only service rendered by the express company, besides that of collection and delivery, is that of providing a messenger—who often is also the railway's baggage man—and that of assuming the risk of damage to goods while in transit. It is, therefore, plain that the service rendered by the express company does not increase in proportion to distance; and it would seem to follow that the revenue it derives should not so increase.

As the *Railway Age Gazette* has said before (May 12, 1911, page 1,097), no evidence has been adduced that the revenue the railways, as a whole, derive from express business is in the least excessive.

The evidence available seems to prove the opposite. On the other hand, the statistics on the subject, if we read them aright, do tend to show that the express companies are deriving very great, if not excessive, returns for the service that they render. But so long as the earnings from the express business are divided on a percentage basis it is impossible to regulate express rates without affecting not only the revenues of the express companies but also those of the railways.

It seems to follow that a different basis for compensating the railways for handling express matter ought to be adopted. Probably a change ought to be made so that the railways will be paid either in proportion to the ton mileage of express matter that they handle, or in proportion to the space that express occupies in their cars and the distance that it is hauled; in other words, in proportion to foot mileage. And when the change is made it ought to be so made that the railways will derive a very substantially larger revenue from the business than they do now. It might then be found that the existing rates for handling express matter are not too high, but merely that the part of the revenue which the express companies are now receiving is too great.

With respect to the organizations by which express should be handled in future (1) the railways might organize a single company all of whose stock they would own and which would be operated without profit, the entire earnings in excess of direct expenses going into the treasuries of the roads; or (2) they might organize, say, three or four companies, each of which would operate over the railways owning it, thereby retaining the competitive element in the express business; or (3) they might leave the business in the hands of the present companies, but under arrangements and contracts which would secure to the roads a larger part of the earnings and under arrangements which would give to railway managers greater and more direct influence over the rates of the companies and over their relations with the public.

It may seem to some that it would be unjust to those who have invested in the securities of the express companies for the railways to now supersede them with organizations of their own. But the contracts between the roads and the express companies are for definite periods of years; railways have a right to refuse to renew them when they expire and have constantly exercised this right; and those who have express stock have bought it with a full knowledge of these facts. Therefore, the railways are under no obligation, either legal or moral, to allow the existing companies to operate over their lines a day after existing contracts expire. Furthermore, the express companies have made large investments in the securities of the various corporations; and if their contracts with the railways were not renewed the stock of their stockholders would not by any means be rendered valueless.

One thing is certain; the time has come when the railways and express companies must do something in regard to express rates. Attacks are being made on them all over the country. All the express companies have done to defend them has been to set up that the commissions lack jurisdiction. But, as has just been shown in Illinois, it is very easy for a legislature, after the courts have held that a commission lacks jurisdiction, to give it jurisdiction, and when the struggle for public control of any public utility has been needlessly prolonged the last state of that public utility is pretty sure to be worse than was its first state.

Furthermore, the agitation for the establishment of a federal parcels post goes on apace, and is steadily gaining strength; and all the pleas about jurisdiction that near-sighted attorneys for the express companies may make, and that Bourbon managers may permit, will not, in the long run, prevent reductions in rates either by the competition of a parcels post or by action of legislatures and commissions. If the railways and the express companies will now meet the situation frankly and fairly they may get the state and the federal governments to act reasonably. If they do not we probably shall have a repetition of the results that were produced by the failure of the railways to meet frankly and reasonably the demand six years ago for legislation to give the Interstate Commerce Commission limited power to fix rates. If the officers of public utilities want the public to be reasonable in dealing with them they must be reasonable in dealing with the public. The express companies have not yet shown any signs of reason, nor have they shown even common sense, in dealing with the public.

NEW BOOKS.

Notes on Plate-Girder Design. By Clarence W. Hudson, C. E., Mem. Amer. Soc. C. E., Professor of Civil Engineering, Polytechnic Institute of Brooklyn, N. Y. 75 pages, 6 in. x 9 in., Illustrated. John Wiley & Sons, New York. \$1.50.

The instruction given in engineering courses on the design of plate-girders is usually limited to a few recitations in the general bridge course supplemented by more or less drafting room practice, and in many cases the subject is not given the attention which it deserves on account of the growing importance of this class of structures in present-day engineering practice. The book by Prof. Hudson is a collection of notes which he has worked out in his own experience in teaching the subject of plate girder design, and is intended to be given to the average class in one recitation a week for one semester of the college year. The theories involved in these notes and the details of design are taken up in a thorough manner, but the author has kept well in mind the fact that the notes are for class room instruction and has made them as brief as is consistent with perfect clearness to the student. The book should prove of value for the purposes for which it was written, namely to serve as a class text book.

The first 95 miles of the railway from Dean Funes, Argentina, to Laguna Paiva, counting from the first station mentioned, have been opened to public service.

Letters to the Editor.

ARBITRATION OF RAILWAY LABOR DISPUTES.

In the letter from Mr. Melcher, printed last week, Mr. Delano was quoted as saying that it should be more obligatory to take controversies in railway matters to arbitration than to take controversies between individuals to a court of law. It should have read that he contended it should be *no* more obligatory, etc.

SETTLEMENT OF FREIGHT CLAIMS.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

This subject has been one of the most difficult to overcome, or even improve, on account of the long and vexatious delays on the part of the carriers in the adjustment of claims. In great measure, this is due to the tedious and inefficient methods employed in the handling of claims, resulting in a large amount of unnecessary correspondence, checking percentages, tariffs, etc., in cases of overcharge, and long arguments as to liability in cases of loss and damage. In the meantime there is perfect indifference to the general public, waiting patiently for reimbursement. This troublesome question has engaged the attention of the Interstate Commerce Commission, and conferences have been held by Professor Adams with members of the Freight Claim Association, but no practical solution has yet been evolved.

It is evident that to fairly and squarely meet the situation, decided changes should be made in the conduct of this branch of the service, breaking away entirely from the present prevailing methods, and establishing new principles on the basis of quickly accomplishing the desired results with the least possible delay and red tape.

In order to meet the requirements of the Interstate Commerce law, all railways are now revising waybills in respect to rates, classification and computations, thereby bringing claims for overcharge under the immediate control of the freight accounting officer for adjustment. These adjustments could be made by correction in the station accounts, and refund made by the station agent who handled the original transaction (in exactly the same manner as undercharges are now handled), all of which could be accomplished with a minimum amount of labor and within a short time after the overcharge is discovered. Adjustment of these items in "interline" accounts would be a simple proposition, as in most cases they could be adjusted in the current month's accounts, dispensing with much unnecessary correspondence, checking, recording and voucher work.

The situation in respect to loss and damage claims is somewhat different, but in view of the fact that the amounts paid for this class of claims have increased to such an enormous extent within the last few years, due, it is claimed, to the use of automatic drawbars, inefficient service from the employees on account of labor affiliations, and other causes, there cannot be much doubt that in order to meet the new conditions, the investigation of these claims ought to be transferred to the operating department. The amounts paid are charged to transportation expenses, the loss or damage is caused by employees responsible to and a part of that department, and only an officer of that department, with the necessary authority, can have the facilities at his command to thoroughly and promptly investigate these claims. Moreover, with a competent force of inspectors and the co-operation of division superintendents, he can eliminate in a great measure the conditions under which these losses or damages occur. He can cure the evil, if anybody can. It is not so much promptness in settling claims that concerns the public, as it is the importance of some measures being adopted to prevent the losses.

Efficiency is the watchword of the day, and the most approved methods must be utilized, in a direct and forceful manner, if any improvement is to be made in this important branch of the service.

ASSISTANT GENERAL AUDITOR.

TO CULTIVATE AN ESPRIT DE CORPS.

BUFFALO, May 22, 1911.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

How is the train service of the railways of this country to be improved in efficiency so that the constant stream of complaints which reach the ear of the public, in connection with accidents and on other occasions, may be diminished? I have just given a second reading to a letter touching on this subject which appeared in your issue of March 31 last, and it seems to me that the suggestions offered by your correspondent in that letter ought to receive serious attention. In the second column of his letter, last paragraph, in succinct language he points out what the railway officer ought to do; but there he stops. He throws no light on the question of how to do it. He says that the railway officer having charge of the rank and file must know his men's weaknesses and strength and know the conditions under which they work. Whether officers really do study their men, as he intimates, must on many roads seem questionable, but that the study ought to be made no one doubts. The railway officer, and in particular the division superintendent, must have the highest possible standards and must live up to them. But how is he going to work to carry out this beautiful ideal? It is my observation that usually the division superintendent is but a cog in a great machine. Perhaps your correspondent did not think so when he used the term "cog," but men even higher than division superintendents say that they often feel that way. To know his men's weakness and strength sufficiently well to cure their weaknesses and increase their strength, the superintendent must get acquainted with them as individuals. Knowledge of men as a body—that is, knowledge of their salient characteristics—is measurably well accomplished now, I judge. The superintendent can do this through trainmasters and road foremen of engines. But this is not enough. Inefficient service seems to be due in large measure to ignorance, to laziness, or to feelings of petty unfriendliness which can be got at only by some little actual contact between man and boss; contact sufficient to engender some real candor, if not confidence. Candor cures a lot of things; even, sometimes, the misunderstandings among the employees as to why the company cannot advance wages, and the superintendent's or trainmaster's conceited notion that a partial or insincere defense of the company will "go down" with the intelligent employee.

I call the division superintendent a cog because he is so helpless. He cannot get acquainted with his men because to do so takes months of time, and he is frequently called away by other duties. He cannot use his judgment in important matters until he has consulted the general superintendent; and the general superintendent must consider a dozen other superintendents before he decides, besides being cramped by the general policy of the company, which forbids the establishment of new regulations or the expenditure of money except where it is certain that there will be no disturbance of uniformity. Getting acquainted with the men means a good deal. A superintendent of my acquaintance, who had under his supervision a number of tug boats, told me recently how, in order to cure apparently incurable delays in the marine service and attain a reasonable measure of efficiency, he had to go and stay with the tug boat men night and day for a long time. I believe it was a month. He had to sleep on one of the boats. Such work as this cannot be done by a superintendent who is overworked or who, not being overworked, has a tendency to shirk unpleasant tasks.

Reluctance to exercise individual judgment seems to be largely due to over-cautiousness in expenditures. Why should not every superintendent have power to spend from 1 to 3 per cent. of the amount of his train-service pay-rolls for any object, looking to the improvement of the train service, which may approve itself to him? Could not he spend a good part of such money for special gratuities with good results?

As to whether the desired improvement in the administration

of a division could be better accomplished by having more numerous and more powerful trainmasters or by reducing the size of the divisions, I do not know. Perhaps nobody knows. But can anyone say that one or both of these remedies ought not to be tried?

You told several years ago of the policy of President Vreeland of the street railways in New York City, of keeping in touch with his men by always being present at the informal evening gatherings of their associations. Is not this a thing which should be imitated in the steam railway service? To the distant observer even Mr. Vreeland's praiseworthy course would seem to be rather superficial, but he does better than most superintendents do. Possibly a good deal of improvement could be made even by superficial measures.

And what shall the superintendent do with the employees' unions? No doubt the unions are going to continue indefinitely their present policy of dealing with the officers through committees. The majority of the rank and file do not care to try individually to negotiate with a superior. The grievance committees must magnify their office and they have a constant tendency to try to go over the heads of the division officers and get as near to the president of the road as they can. But, surely, the superintendent has a duty to get acquainted with his men in some way. Will it be necessary for him to try to cultivate those of his employees who are not members of unions? Will he have to go so far as to appoint men known to be opposed to unionism? The trade union spirit seems to be disposed even to discourage intimacy of individual members with superior officers. The members of the Train Dispatchers' Association are somewhat intimate with their superiors and the association is opposed to strikes. But this policy has been attacked by members of the association who believe that no union is of any value unless it is ready at any time to fight for higher pay.

It seems to me that great good can be accomplished by the superintendent who will have the originality and independence to start a campaign of education by temporarily—that is to say for six months or a year—spending nearly all of his time out on the road getting very well acquainted with his train and station men. To do this would necessitate the employment of more assistant superintendents, no doubt; but it is to be hoped that the results would be so satisfactory that those assistants would find themselves in permanent situations. Some other superintendent might furnish an example which would be worthy of wide imitation, by carrying out Mr. Vreeland's method. To do that, however, would require ingenuity and even, perhaps, genius, for it would be necessary constantly to devise new subjects to be taken up at meetings; and the superintendent would have to be alert to take advantage of any developments that might result.

I am not a railway officer. I look at this matter from the standpoint of a public officer anxious to formulate the requirements which the public ought to impose on the railways. Can some of your readers enlighten me?

G. M. H.

The Belgian parliament has approved the construction of a railway line, which, in connection with navigable rivers, will complete a route to the west side of Lake Tanganyika, to be built only when the German Central African line shall have been completed to the eastern side of Lake Tanganyika, which will probably be within a few years. Then there would be a complete trans-African line, the various sections of which are as follows: Matadi to Leopoldville, 249 miles by rail; Leopoldville to Stanleyville, 1,000 miles by river; Stanleyville to Ponthierville, 79 miles by rail; Ponthierville to Kindu, 200 miles by river; Kindu to Kongolo, 221 miles by rail; Kongolo to Kabalo, 47 miles by river; Kabalo to Lukuga outlet, 167 miles by rail; Lukuga outlet to Kigoma, 93 miles by river; Kigoma to east shore of Tanganyika, 110 miles by rail; across lake, 50 miles; and Tanganyika to Dar-es-salam, 700 miles by rail. The time given for such a journey is 32 days going east (up stream) and 22 going down, which is more than a steamer would require to go round the Cape.

MAINTENANCE OF EQUIPMENT COSTS.

BY C. J. MORRISON.*

In point of importance, maintenance of equipment ranks second among the items entering into railway operating expense. In 1901 it ranked third. The relative proportion of the main divisions of expense averaged for the large railways in the years 1901 and 1910 as follows:

	1901. Per cent.	1910. Per cent.
Maintenance of way and structures.....	22.3	20.5
Maintenance of equipment.....	18.6	23.2
Conducting transportation	55.0	53.0
General expense	4.1	3.3

Of all the main divisions of expense shown above, maintenance of equipment is the only one which has increased in ratio to total operating expense during the ten year period ending with 1910. This increase is very marked and in strong contrast to corresponding reduction in the other three main operating divisions of expense. The relative proportion of the four divisions

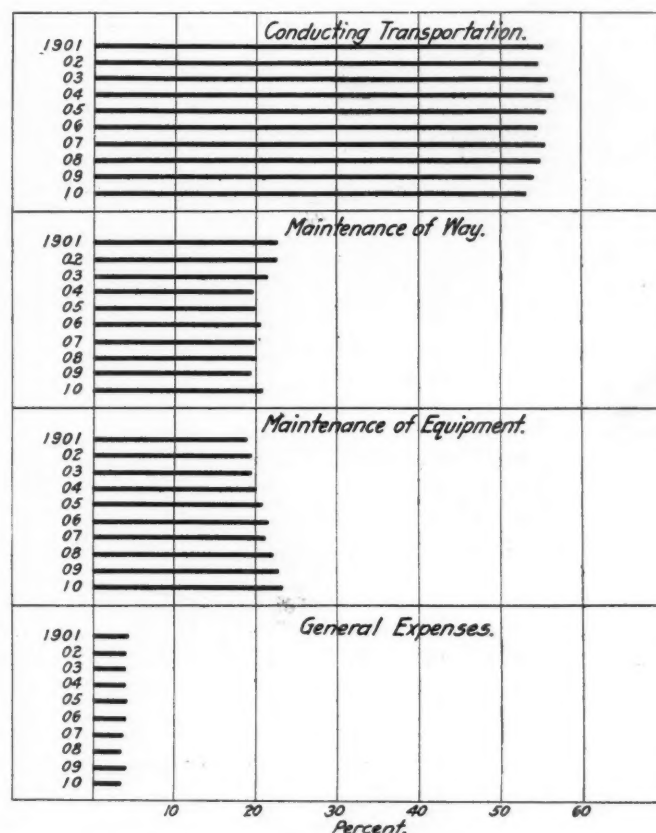


Fig. 1—Percentages of Operating Expenses; Averages of Large Roads.

of expense to the total cost of operation for the period between 1901 and 1910 is shown graphically in Fig 1.

The component charges entering into maintenance of equipment, such as labor, material, etc., are also common to the other operating items, maintenance of way and conducting transportation. The assertion therefore that higher labor and material costs are responsible for the increasing ratio in the cost of maintenance of equipment to total operating expense does not hold when the same test is applied to conducting transportation and maintenance of way.

That a definite relation exists between increasing cost of maintenance of equipment and decreasing transportation charges is clearly reflected through analysis of conditions. Locomotives and cars are growing larger in capacity, obviously reducing the power units required to handle a given amount of traffic. It is logical to assume that the purpose of this policy was directed to-

* Working in conjunction with a number of railway officers. Mr. Morrison is manager, department of effective organization, Suffern & Son, New York.

ward reducing cost of transportation. Reports reveal the truth of this assumption and the actual fact that through the medium of larger motive power and rolling stock, the cost of transportation has been greatly reduced.

Repairs to locomotives are approximately proportional to their weight. With the advent of heavier power, higher maintenance

Atchison for 23 per cent., an increase of 8.0 per cent.; the Baltimore & Ohio for 26 per cent., an increase of 32 per cent.; and the Pennsylvania Railroad for 26 per cent., an increase of 10.2 per cent. over 1901.

As previously stated, repairs to locomotives are approximately proportional to their weight. Likewise, an almost fixed relationship exists between weight of locomotives and tractive force. The latter unit then can be taken as a measure of the size or weight of locomotives. The average tractive force of locomotives from 1902 to 1910 with the per cent. increase compared with the year 1902 is shown in Fig. 3.

There is also a remarkable similarity in the increase of capacity of freight cars and tractive force of locomotives for the period between 1902 and 1910. During this time the capacity of freight cars has increased 28.6 per cent. and the tractive force of loco-

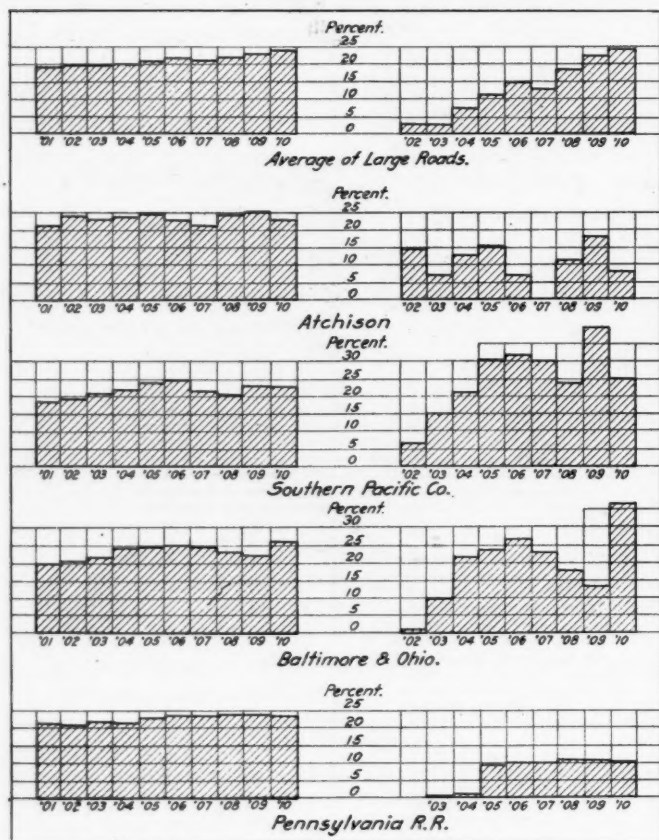


Fig. 2—Maintenance of Equipment Ratios.

Ratio of maintenance of equipment to total operating expense.

Percent. increase of maintenance of equipment to total operating expense over year 1901.

costs are expected, not only per locomotive but also per mile run. The same is equally true of cars. Thus improved transportation efficiency is purchased at an increased cost of mechanical department operation.

The ratio of maintenance of equipment to total operating expense on the large roads for the past ten years is shown graphically in Fig. 2. The per cent. increase in maintenance charges to the total compared with the year 1901 are also included with similar information for four representative roads.

In 1901 equipment on the large roads was maintained for 18.6 per cent. of total operating expense. During the following decade

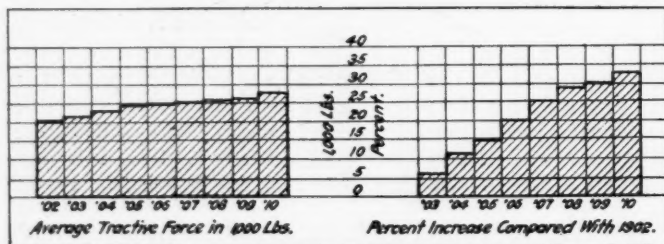


Fig. 3—Average Tractive Force; All Roads.

the percentage increased steadily, reaching 23.2 per cent. in 1910, an increase of nearly 25 per cent. over the figure in 1901. The same conditions in varying degree are reflected in the records of the representative railways shown. The Southern Pacific maintained its equipment in 1910 for 22.7 per cent. of total operating expense, an increase of 25.4 per cent. over 1901; similarly the

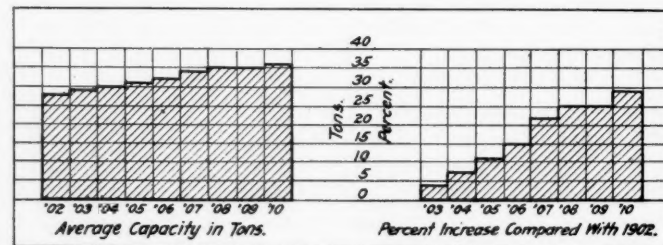


Fig. 4—Average Capacity of Freight Cars; All Roads.

motives 32.8 per cent. Cars and locomotives have steadily grown larger in approximately the same ratio from year to year.

The average capacity of freight cars from 1902 to 1910, with the per cent. increase compared with the year 1902, is shown in Fig. 4.

A comparison of locomotive tractive force and freight car capacity with the ratio of maintenance of equipment to total operating expense for the period between 1901 and 1910 (Figs. 2 and 3) establishes the close relationship between maintenance costs and size of equipment. Cost of maintaining locomotives or cars is approximately proportional to tractive force or capacity.

Maintenance charges for large equipment are greater per unit on account of increased size of locomotives and cars, more extensive shops and terminals, heavier machinery and modern facilities for handling and repairing, increased wear and tear on equipment

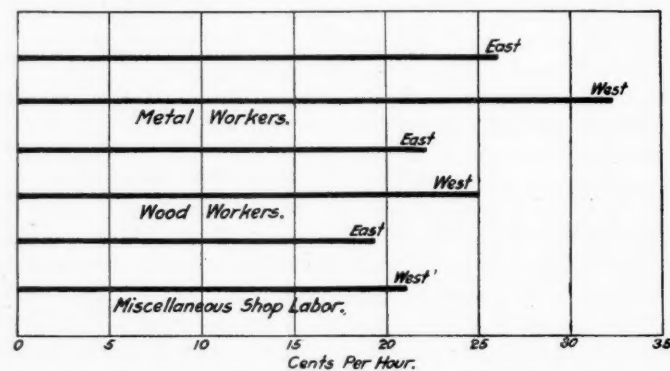


Fig. 5—Average Wages on Eastern and Western Roads in 1910.

from heavier trains and the various other items coincident with operation of heavier power.

Operating conditions on the railways east of Chicago are along fixed and tried lines, while the West is still in a more or less new condition. Labor in the West is scarce and generally of poor quality. It is therefore necessary to pay higher wages in order to attract the better class of labor from the East.

As the labor charge constitutes more than half the equipment maintenance expenditures, the higher wages paid on western roads will be reflected directly in the total when comparisons are made with eastern roads. Metal workers, wood workers and miscellaneous shop labor include most of the employees in the

locomotive and car shops and fairly represent the general labor situation.

The total figures taken from the Interstate Commerce Commission reports separated into eastern and western roads are shown in chart form in Fig. 5, with actual figures as follows:

	WAGES PER HOUR.		
	Eastern Roads.	Western Roads.	Per cent Increase Western over Eastern
Metal workers	\$.265	\$.327	23
Wood workers .....	.226	.253	12
Miscellaneous shop labor.....	.197	.215	9

is the locomotive or locomotive mile. In order to illustrate the great difference existing on various roads, a chart (Fig. 6) is presented showing the cost of repairs per locomotive for the years 1908, 1909, 1910.

It is noticeable that there is a general increase on most roads and on the western roads in particular.

The extremes on the eastern roads are noticed on the L. & N. and the P. C. C. & St. L., which expend about \$3,000 per locomotive as against the Lackawanna with an expenditure of less than \$2,000. Of the western roads the Union Pacific and Southern Pacific show an annual cost of about \$3,500 per loco-

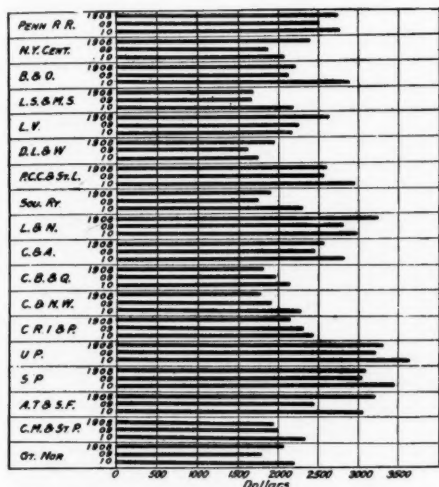


Fig. 6—Repairs to Locomotives Per Locomotive.

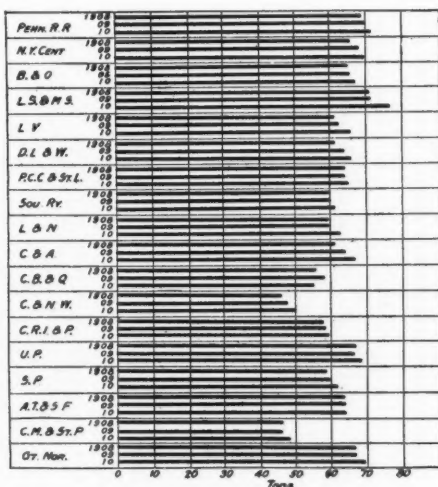


Fig. 7—Average Weights on Drivers.

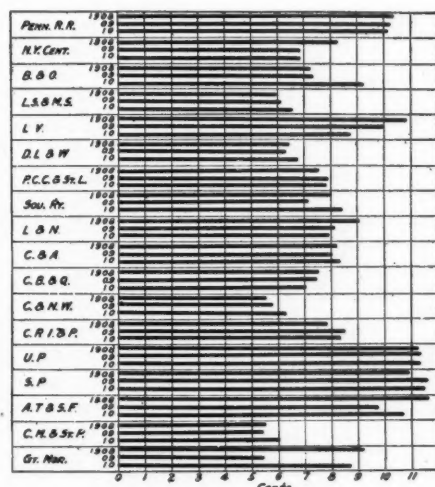


Fig. 8—Locomotive Repairs Per Locomotive Mile.

This marked increase of 23 per cent. in wages paid metal workers on western roads is a most important item, and should be given due weight when comparisons are made between eastern and western roads.

LOCOMOTIVE MAINTENANCE.

The most logical unit for measuring maintenance of equipment costs is the gross ton mile, but this is not available, is not kept by some roads, and is not required by the Interstate Commerce

motive as compared to approximately \$2,000 each on the Burlington, the North Western and the St. Paul. In order to form an idea of the relative performance it is necessary to know the average weight of the locomotives on each road which is shown in Fig. 7. Even with this data it is almost impossible to draw definite conclusions as to relative performance.

The repair costs on a locomotive mile basis are but little better for comparison. The accompanying illustration (Fig. 8) presents figures for representative roads and shows that the costs

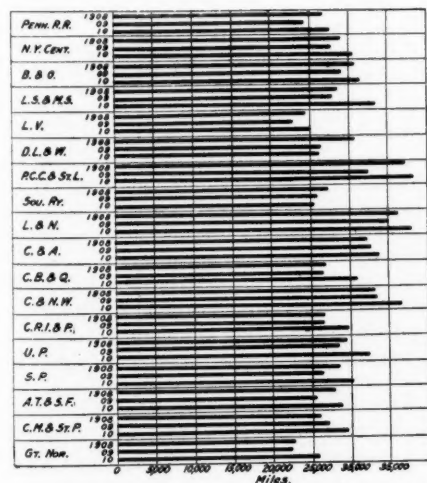


Fig. 9—Miles Per Locomotive, All Classes.

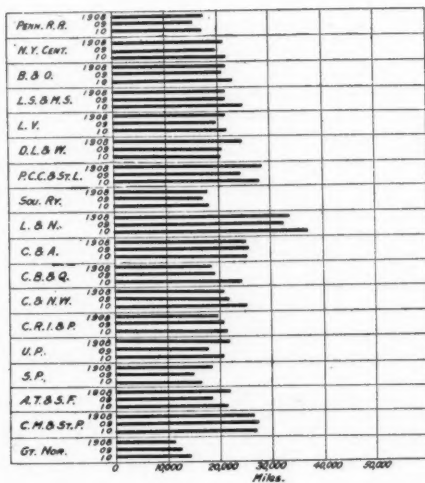


Fig. 10—Miles Per Freight Locomotive.

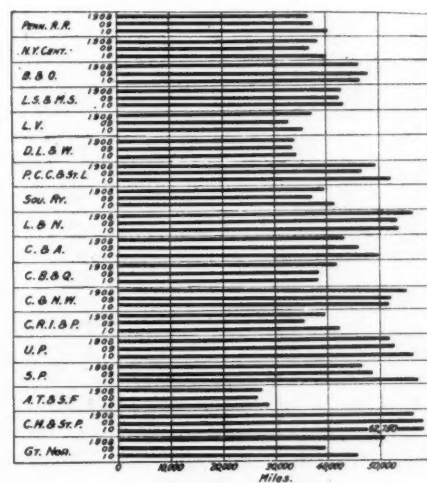


Fig. 11—Miles Per Passenger Locomotive.

Commission. In the absence of this information the analysis will be continued with such data as is available.

More than one-third of the total maintenance of equipment expenditure is charged to repairs and renewals of locomotives. These costs should therefore be carefully studied and the proper unit of comparison adopted before conclusions are drawn.

The prevailing unit, in comparing locomotive maintenance costs,

of repairs on the Pennsylvania Railroad and the Lehigh Valley are about 10 cents, while on the Lake Shore and the Lackawanna they are but 7 cents. Of the western roads the Union Pacific and the Southern Pacific expend more than 11 cents, while the North Western and St. Paul cost about one-half as much.

To fully interpret these results it is necessary to know the mile-age made per locomotive, which is presented in Fig. 9.

The Interstate Commerce Commission does not demand locomotive maintenance costs divided into freight, passenger, etc., which undoubtedly should be done if comparisons are to be made on an equitable basis. The mileage of freight and passenger locomotives, however, is given and charts are presented in Figs. 10 and 11. Of the eastern roads the P. C. C. & St. L. makes more than 25,000 miles per freight engine, while the Pennsylvania Railroad makes but 17,000 miles. The St. Paul makes more than 26,000 miles and the Great Northern less than 15,000 miles per freight locomotive, while the other roads show large differences.

but based on the work done, the watt-hours. It is therefore reasonable to expect to show locomotive costs on a similar basis. Tractive force or draw bar pull is the usual term used to express the power of a locomotive. The work unit (which may be called the tractive mile) is:

Average tractive effort in lbs. \times average mileage per locomotive.

1,000,000

By the use of either of the above units (tractive force or tractive mile) a fair basis of locomotive maintenance costs can be made.

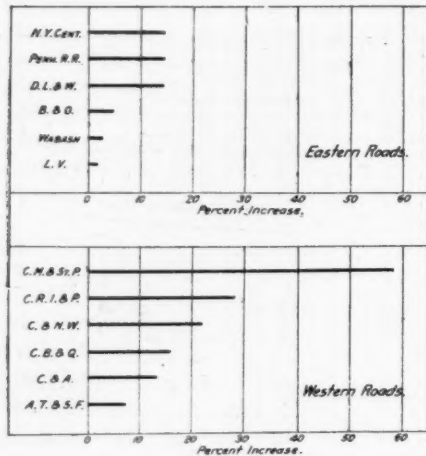


Fig. 12—Repairs and Renewals of Locomotives Per Locomotive; Five Years Ending 1910 Compared With Previous Five Years.

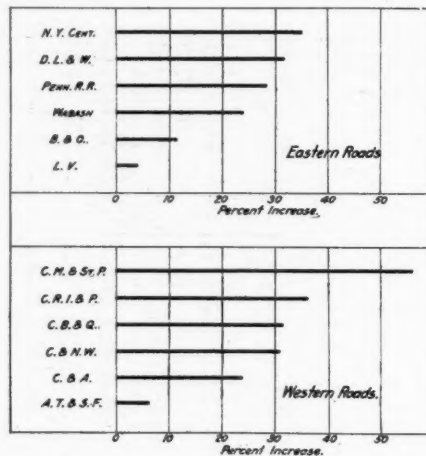


Fig. 13—Repairs and Renewals of Locomotives Per Locomotive Mile; Five Years Ending 1910, Compared With Previous Five Years.

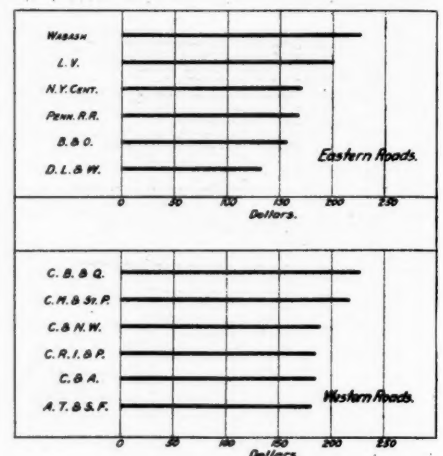


Fig. 14—Repairs and Renewals of Locomotives Per Ton of Tractive Force; Five Years Ending 1910.

A chart illustrating miles run by passenger locomotives (Fig. 11) shows the extremes to be the St. Paul with 60,000 miles, as against the Atchison with less than 30,000 miles per passenger locomotive. There are probably local conditions that cause this high mileage on the St. Paul and the low mileage on the Atchison, but goes to show that all the conditions should be known and understood before conclusions are drawn.

It is thus seen that the locomotive and the locomotive mile

The gross ton mile data is not available, but fortunately the Interstate Commerce Commission recently prepared statements on 20 roads used in the recent rate hearing which presented detailed information heretofore unpublished. This data is very full and complete and covers ten years ending 1910. Comparisons were made by five year periods.

Charts are herewith presented giving exhibits of six eastern and six western roads showing locomotive maintenance costs.

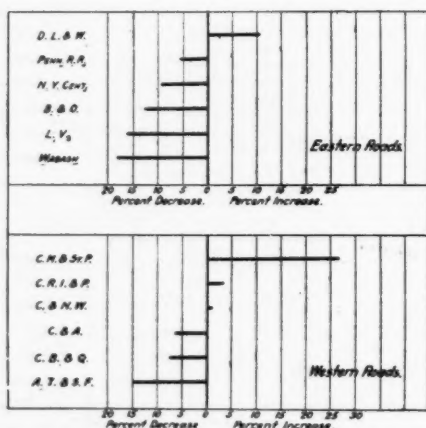


Fig. 15—Repairs and Renewals of Locomotives Per Ton of Tractive Force; Five Years Ending 1910, Compared With Previous Five Years.

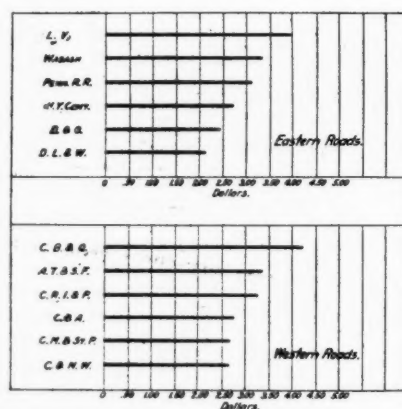


Fig. 16—Repairs and Renewals of Locomotives Per Work Unit; Five Years Ending 1910.

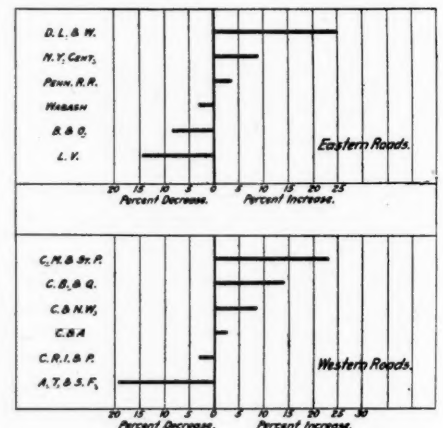


Fig. 17—Repairs and Renewals Per Work Unit; Five Years Ending 1910 Compared With Previous Five Years.

are most unsatisfactory units to use when computing locomotive maintenance costs.

A unit should be used which takes into consideration the power developed and the work delivered by the locomotive. The engine which propels the steamship is rated in horsepower and the performance is calculated in horsepower-hours. Electrical power units are similarly rated in watts and the work performed is given in watt-hours.

Maintenance costs are not calculated as so much per dynamo

The average cost of repairs and renewals on locomotives per locomotive for five years ending 1910 compared with five years ending 1905 is presented in Fig. 12. It is noticeable that maintenance charges on this basis have increased on all roads.

REPAIRS AND RENEWALS ON LOCOMOTIVES PER LOCOMOTIVE.			
Eastern Roads.		Aver. 5 Yrs. Ending 1905.	Aver. 5 Yrs. Ending 1910.
N. Y. Central.....		\$2,150	\$2,430
Penna. R. R.....		2,340	2,640
D., L. & W.....		1,480	1,690
B. & O.....		2,370	2,440
			Per cent. Increase.
			14.0
			12.8
			14.2
			3.0

	Aver. 5 yrs. Ending 1905.	Aver. 5 yrs. Ending 1910.	Per cent. Increase.
Eastern Roads.			
Wabash	2,530	2,580	2.0
Lehigh Valley	2,670	2,690	1.0
Western Roads.			
C. & M. & St. P.	\$1,365	\$2,150	57.5
C. & R. I. & P.	1,840	2,330	26.6
C. & N. W.	1,660	2,010	21.1
C. & B. & O.	2,320	2,620	13.0
C. & A.	2,300	2,595	12.8
A. & T. & S. F.	2,600	2,720	4.6

Fig. 13 illustrates the increase in repairs and renewals on locomotives per locomotive mile during the above mentioned period.

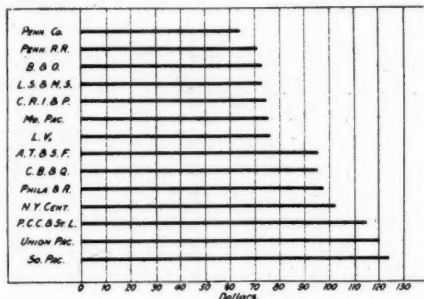


Fig. 18—Maintenance of Freight Cars Per Car in 1910.

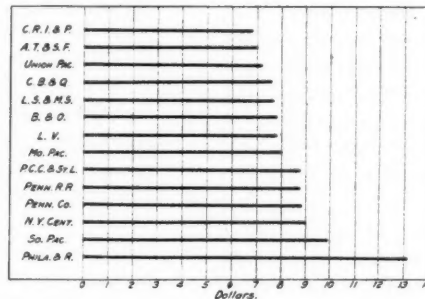


Fig. 19—Maintenance of Freight Cars Per 1,000 Freight Car Miles in 1910.

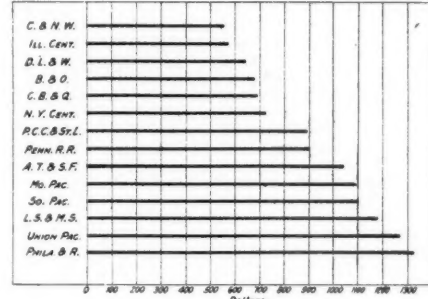


Fig. 20—Maintenance of Passenger Cars Per Car in 1910.

	Aver. 5 Yrs. Ending 1905.	Aver. 5 Yrs. Ending 1910.	Per cent. Increase.
Eastern Roads.			
N. Y. Central.....	5.65 cents	7.81 cents	38.2
D. L. & W.	4.24 "	5.49 "	29.5
Penna. Railroad	7.72 "	9.78 "	26.7
Wabash	6.23 "	7.65 "	22.8
B. & O.	6.98 "	7.67 "	10.0
Lehigh Valley	10.37 "	10.80 "	4.2
Western Roads.			
C. & M. & St. P.	3.46 cents	5.36 cents	55.0
C. & B. & O.	6.78 "	9.07 "	33.6
C. & R. I. & P.	6.20 "	8.22 "	32.6
C. & N. W.	4.34 "	5.68 "	31.0
C. & A.	6.28 "	7.76 "	23.6
A. & T. & S. F.	9.73 "	10.19 "	4.7

The New York Central shows an increase of 38 per cent., and the St. Paul an increase of 55 per cent., while the Lehigh Valley and the Atchison increased less than 5 per cent.

The costs when calculated on the basis of tractive force averaged for five years ending 1910, are shown in Fig. 14.

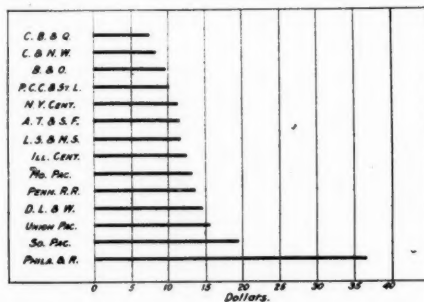


Fig. 21—Maintenance of Passenger Cars Per 1,000 Passenger Car Miles in 1910.

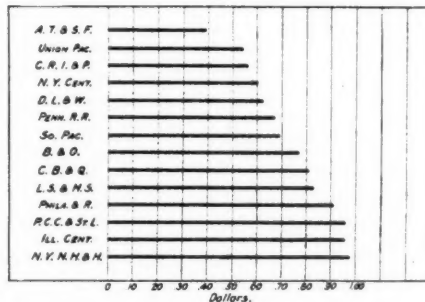


Fig. 22—Maintenance of Shop Machinery and Tools Per Pound of Tractive Force in 1910.

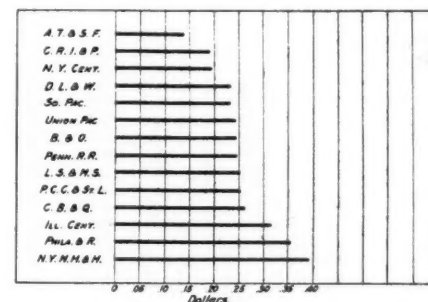


Fig. 23—Maintenance of Shop Machinery and Tools Per Work Unit in 1910.

	Aver. 5 Yrs. Ending 1905.	Aver. 5 Yrs. Ending 1910.	Per cent. Increase.	Per cent. Decrease.
Eastern Roads.				
D. L. & W.	\$121.00	\$133.00	10.0	....
Penna. Railroad	181.00	169.00	....	6.6
N. Y. Central.....	191.00	170.00	....	11.0
B. & O.	182.00	158.00	....	13.2
Lehigh Valley	241.00	200.00	....	17.0
Wabash	280.00	228.00	....	18.5
Western Roads.				
C. & M. & St. P.	\$172.00	\$217.00	26.2	....
C. & R. I. & P.	180.00	185.00	2.8	....
C. & N. W.	189.00	191.00	1.0	....
C. & A.	198.00	136.00	....	6.1
C. & B. & O.	246.00	223.00	....	9.3
A. & T. & S. F.	219.00	182.00	....	16.9

A comparison of the performance by five year periods (Fig. 15) for the eastern roads points out the fact that while the Wabash and Lehigh Valley spent the most money per ton of tractive force they made a decrease of more than 15 per cent. during

the five years ending 1910 over the five years ending 1905. The Lackawanna, on the other hand, while showing the least expenditure per ton of tractive force, actually increased its costs in the five year period ending 1910 over the previous five years. The western roads show a more nearly equal expenditure, but a wider variation in comparing the two five year periods. The St. Paul shows an increase of 26.2 per cent. in the five year period ending 1910 over the five year period ending 1905, while the Atchison shows a decrease of 16.9 per cent. during the same period.

The locomotive maintenance costs computed on the tractive mile or work unit basis (Fig. 16) show that the Lehigh Valley costs are highest, but that it has decreased their costs 14.5 per cent. (Fig. 17). The Lackawanna is just the reverse in that their costs are lowest per work unit, but it has increased 24.6 per cent. during the past five years as compared with the five year period ending 1905. On the western roads there is not the variation noted on the eastern roads in actual costs. However, in comparing the two five year periods the extremes are the St. Paul, with an increase of 23.2 per cent., and the Atchison, with a decrease of 19.5 per cent.

FREIGHT CAR MAINTENANCE.

Freight car maintenance constitutes approximately 7 per cent. of the total operating expense and 30 per cent. of the total cost of maintenance of equipment.

A common method of comparison of maintenance of freight cars is "per car owned," and a chart (Fig. 18) is given herewith showing the cost per car on a number of representative roads. On the roads illustrated the cost per car varies from \$65 on the Pennsylvania Company to \$122 on the Union Pacific system and \$126 on the Southern Pacific. The average capacity varies from a minimum of 31 tons on the Atchison to a maximum of 44.8 tons on the P. C. C. & St. L.

The remarkably low cost on the Pennsylvania Company, as compared with the high cost of the Union Pacific, in place of reflecting economy in one case and extravagance in the other, serves as conclusive evidence that the maintenance per freight car owned is useless as a comparative unit.

Upon the Interstate Commerce Commission records for the fiscal year 1910, the Union Pacific reports 441,540,857 freight car

miles and 26,043 freight cars owned; while the Pennsylvania Company reports 401,108,276 freight car miles and 54,248 cars owned. The Pennsylvania Company, with 108 per cent. more freight cars than the Union Pacific has 9 per cent. less mileage, which condition can exist either from an excessive number of cars or by a very large amount of interchange, which latter is probably correct as 80.3 per cent. of the freight car mileage on the Union Pacific was from foreign cars.

The interchange of traffic renders maintenance costs per freight car owned of little value for comparative purposes. Other conditions also modify the usefulness of this unit. The cost of freight car maintenance is proportional to age of the equipment, its present condition, class of traffic handled, and total weight in transit and business hauled. In addition, the physical characteristics have considerable influence as repairs are more extensive in mountainous districts where heavy grades and curvature prevail than on the plains where grades and curvature are slight in comparison.

It is clear from the foregoing that costs per car owned cannot be used as a basis for comparing maintenance of freight cars on different roads. For roads operating in the same general territory the ton mile is an equitable basis of comparing maintenance, but on account of the variation in operating conditions on roads in different sections of the country it is not adaptable as a unit for universal comparative purposes.

A satisfactory basis for analysing maintenance of freight cars is the gross ton mile, but as these records are not kept by the Interstate Commerce Commission the information is not available. As the gross ton mile includes the weight of the car, whether loaded or empty, and the miles hauled, it is obvious the unit is proper for comparing maintenance costs.

The commission presents data on the revenue ton mile, which is not a satisfactory basis of comparison, as it does not include the empty car mileage or that of cars engaged in transporting company material. Obviously the omission of this traffic renders the information incomplete. The mileage of empty cars is a large item. For instance, in 1910, on the Union Pacific, it was 23.4 per cent. of the total car mileage, 29.6 per cent. on the Atchison, 33.7 per cent. on the Pennsylvania Railroad, and 35 per cent. on the Philadelphia & Reading. Empty cars in service are subject to the wear and tear of traffic and depreciation the same as cars in revenue service. Likewise cars carrying company material are in the same service as revenue freight when maintenance is considered. Company material is an extensive traffic item. For example, during the fiscal year 1910 the net ton miles of company material on the Southern Pacific was equal to 20 per cent. of the revenue ton miles, while on the Atchison it was 32 per cent.

It is unfortunate that data on gross ton miles is not available in view of its value as a unit for comparing maintenance of freight cars on different roads. Without this information an analysis of maintenance costs cannot be carried to a positive conclusion, but a unit of comparison, namely, cost per 1,000 freight car miles is presented (Fig. 19) for the leading roads for 1910 as the most definite data available. The figures given indicate approximate costs of maintenance without the accuracy of the gross ton mile unit.

PASSENGER CAR MAINTENANCE.

The charges for passenger car maintenance are less than 10 per cent. of the expenditure for maintenance of equipment or about 2 per cent. of the operating expense, and therefore of minor importance when considering total operating expenses.

The demands of the traveling public, local conditions, size of equipment all have a bearing on the repair costs and comparisons among different roads are generally of but little value.

Unfortunately, the Interstate Commerce Commission records do not contain any data with reference to the size, capacity or weight of the passenger coaches for the different railways. Since it is quite evident that coaches 70 feet in length, with steel underframes, and six wheel trucks, will cost more to maintain than coaches 55 feet long with wooden underframes and four-wheel

trucks, it is practically impossible with the data at hand to effect accurate comparisons.

As in the case of freight car maintenance, the usual method of comparison is on a basis "per passenger car" and the accompanying chart (Fig. 20) shows the maintenance cost on this basis for a number of roads. These figures vary from \$656 on the Lackawanna to \$1,344 on the Reading, and \$562 on the North Western to \$1,286 on the Union Pacific.

The mileage made is another common basis of comparing passenger car maintenance costs. The accompanying chart (Fig. 21) shows some interesting comparisons of roads operating in the same territory.

The maintenance cost on the Reading per 1,000 car miles is \$37.05, \$10.12 on the P. C. C. & St. L., \$19.42 on the Southern Pacific System, and \$7.60 on the C. B. & Q.

These figures are more interesting in connection with the maintenance on roads operating in the central states, the Burlington at \$7.60, the Northwestern at \$18.36, the Illinois Central at \$12.57 and the Missouri Pacific at \$13.20. Again, roads operating from the west and southwest, the Atchison at \$11.67, Southern Pacific system at \$12.89 and the Union Pacific system at \$15.83.

Comparisons of this nature can be drawn on this basis among the different railways, but as has been mentioned above, these figures are only of relative value.

Passenger car maintenance costs are in direct relation to the weight and the distance carried. The ton-mile is therefore the most satisfactory basis, as in the case of freight cars, but this figure is not demanded by the Interstate Commerce Commission and therefore is not obtainable.

SHOP MACHINERY AND TOOLS.

The items of locomotives, freight cars and passenger cars constitute about three-fourths of the charges to maintenance of equipment. The remainder is made up of superintendence, electric, floating and power plant equipment, injuries to persons, shop machinery and tools, stationery and printing, and other expenses. The only item which is worth considering is that of shop machinery and tools, and this expenditure amounts to about 3 per cent. of the total maintenance of equipment.

The charges to this account should be in direct relation to the size of and to the service rendered by the locomotive. The expenditures in the freight and passenger departments are small and of but little consequence.

Therefore the locomotive tractive force is the fair basis to use for comparative purposes. Charts are presented illustrating costs on representative roads for maintaining shop machinery and tools on a tractive force basis (Fig. 22), and also the work unit.

In treating the subject of maintenance of equipment expenditures, it has been impossible to separate charges for labor from material charges. This is exceedingly unfortunate as a thorough and complete analysis cannot be made without knowing the proportional charges between labor and material. It is to be hoped that the Interstate Commerce Commission will see the importance of this information and ask the railways to furnish it in the future. This completes the analysis of maintenance of equipment costs. Much of the data is presented in entirely original form, not only for the purpose of rendering consistent comparisons of costs on various roads, but also to point out the uncertain value of the accustomed standards of measurement.

During the year 1910 the number of persons ticketed over the Siberian Railway between the European cities and China, Japan and other eastern Asia points was 4,852 adults and 170 children, the receipts from whom were \$615,300, an average of \$125 per passenger. This is much the largest travel the road has ever had, the increase over 1909 having been 36½ per cent., though it was reduced in the latter part of the year by the prevalence of plague in Manchuria. But it is after all a light movement, equivalent to but 69 persons each way daily. The earnings are at the rate of about \$153 per mile for the Siberian Railway, which receives, however, only a part of them.

NEW RAILWAY LAWS IN OREGON.

The State Railroad Commission of Oregon, C. B. Aitchison, chairman, has issued a circular giving a brief statement of the laws enacted by the last legislature of that state, and ordered to go into effect May 20, 1911 (except as noted).

Chapter 27 forbids the transportation of explosives on cars intended for passengers.

Chapter 29 requires shelters for car repairers at division terminals and at other points where five or more repairers are regularly employed. Five months is given in which to comply with this chapter.

Chapter 56 authorizes transportation of soldiers and military equipment free or at reduced rates.

Chapter 57 continues orders of the commission in effect where a railway changes owners or operators.

Chapter 68 prohibits knowingly transporting or causing to be transported within Oregon of any woman or girl for the purpose of prostitution and imposes penalty.

Chapter 77 amplifies and strengthens the rate law (section 6886).

Chapter 93 amends the Long and Short Haul law by inserting "under substantially similar circumstances and conditions," and by allowing the commission to authorize exceptions.

Chapter 96 provides for the inspection and sealing of track scales by the commission.

Chapter 125 imposes a penalty for wilful injury to bridges, railways, telegraphs, etc., or wilful arrangement of telephone or telegraph wires to interfere with their efficiency.

Chapter 135 prohibits drinking and intoxication on any engine, car, train or depot, except dining cars, etc.

Chapter 136, to regulate the transportation of live stock, prescribing minimum rates of speed, the installation of suitable stock corrals at junction points, for the giving of notice of delays to shippers, and amends the 28-hour law by permitting a separate request to be signed by the shipper extending the time of confinement to 36 hours and otherwise conforming the section generally to the Federal Act.

Chapter 137 prohibits employment of certain railway employees over 14 hours and certain others over 9 hours.

Chapter 139 requires that bonded employees, when discharged, shall be given a written statement of reasons, if they so request; the commission is to investigate the reasons for discharge in "cases involving moral turpitude."

Chapter 150 amends the law concerning fencing of new railways; allows the commission to authorize and regulate farm crossings; to decide what kinds of fence shall be used; and suspend the fence law as to any particular portion of a railway.

Chapter 154 prohibits the transportation of ginseng unless labeled to show certain facts as to the growth and purity of the ginseng.

Chapter 174, Section 2, Paragraph 11 prescribes the manner in which vehicles shall be operated in passing railway or street cars operated in any city, town or village.

Chapter 190 prohibits the transportation of certain kinds of fish taken from the Rogue river.

Chapter 219 requires frogs, switches and guard rails to be blocked by July 1, 1912; and requires that flagmen of passenger trains must be able to read, write and speak the English language; and be 21 years of age.

Chapter 271 confers upon railway corporations the right to appropriate the right of way, roadbed or tracks of other railway corporations in canyons, passes, or defiles.

Chapter 278, section 10, requires smoke-stacks of engines running near forest or brush land to have adequate spark arresters between June 1 and October 1.

Section 11 requires builders of railways to destroy inflammable material along the right-of-way, as directed by the State Board of Forestry.

Attention is called to the fact that the commission is required

by law to report to the attorney-general violations of any of these acts. Copies of the full text of these acts can be had from the secretary of state at Salem, for \$1.45 each.

ISSUE OF STOCK BELOW PAR AND SALE OF BONDS AT A DISCOUNT.

One question that the Securities Commission, which has now been at work for over a year on preparing its report to President Taft, has had to consider is whether or not the commission should recommend a law forbidding the issue of stock at less than par or the selling of bonds at a discount by carriers engaged in interstate traffic. Some of the men whose opinions on this question were sought by the commission made little or no distinction between the issue of stock below par and the sale of bonds at a discount, but the majority of bankers and those having to do directly with the sale of railway securities recognized a clear distinction.

The common practice in the past has been to make the asset side of the balance sheet correspond with the liability side. Stated more simply than it is ever worked out in practice, if \$1,000,000 stock is issued and \$2,000,000 bonds are sold to acquire a given piece of line, that line is carried on the balance sheet at a valuation of \$3,000,000. This has been quite generally the practice, even if the stock were issued at 70. Now, by this misrepresentative bookkeeping there are three classes of people who *might* be injured. In the first place, prospective stockholders who bought stock in the open market believing that the par value of the stock was the actual amount invested in the property; second, the creditors, including the bondholders, who might believe that the par value of the stock represented an equity in the property protecting their credit; and third, the shippers might be charged an unreasonable rate so that dividends could be earned on the par value of stock which was issued at less than par.

It was almost the unanimous opinion of all of the witnesses that the capitalization of a railway had little, if anything, to do with any particular rate; and it was the general opinion of the greater number of the witnesses that the total capitalization of any one road had very little direct bearing on the aggregate of rates which such a railway could charge. As a protection, therefore to shippers, the prohibition of the sale of stock at less than par is not a necessity. President Delano from his observations believed that in many cases where overcapitalization became an unduly strong motive for earning more, an attempt was made to do this by cutting rates and not by raising them.

The protection of the bondholder or other creditor is quite a different question. If the bondholder's equity is really only \$700,000 instead of \$1,000,000, the margin of safety of his bonds is less by just the difference between \$700,000 and \$1,000,000. This, however, is true only immediately after the issue of the stock, for as soon as a road begins to operate the equity behind the bonds is changed. It is quite conceivable that in the case of two competing roads, one of which had sold its stock at 70, and the other at par, the \$700,000 might have been so much more wisely spent than the \$1,000,000 that, after the two roads had been in operation a year, the road that had only \$700,000 invested in it from the proceeds of its stock sale would be earning half as much again as its competitor. One therefore is led to the conclusion that the par value of stock is only a momentary value which changes with market conditions and with operating and traffic conditions. The prospective buyer of bonds of a road already in operation, to be injured by a former sale of stock at less than par would have to close his eyes to all the conditions which affected his property, except a study of the misleading balance sheet which would show an unduly large equity in money derived from the sale of stock. On the other hand, if a new line were to be built, any misrepresentation as to the amount of money spent on the line

would be in the nature of a fraud against the prospective bond buyer. In this case the bond buyer's judgment is influenced not by actual conditions, but by what he thinks ought to result from the expenditure of a certain amount of money.

It came as a surprise to many of the witnesses who testified before the commission that anyone in the present day of enlightenment and *Everybody's Magazine* should attach any consequence to the par value mark on a certificate of stock. The commission, however, pointed out to one of the surprised witnesses that the Supreme Court of the United States still attaches some significance to this nominal figure. Most of the witnesses acknowledged that to a certain class of investors the fact that they could buy at \$50 or \$60, something whose nominal value was \$100 made such a purchase more attractive to them than if the stock certificate had been stamped \$50 or \$60.

As the law stands at present, in many states, it is illegal to issue stock below par; but, under the common law, if stock has been issued and sold below par and is resold to an innocent third party, there is no redress either for the state or for the creditors of the company. The law recognizes that the \$100 stamped on the stock does not mean that that is its value, but it should mean that that is the amount received by the company originally.

One of the remedies suggested for the nominal deceit practiced in issuing stock below par was the passage of a law which should permit the issue of stock without a par value; that is, certificates would be issued, each one stating the percentage of the total profits and assets of the company represented by that certificate. These certificates without a par value could be sold at any price which they would bring and the asset side of the balance sheet would then only need to show the amount actually received from the sale, and the participation certificates would automatically adjust themselves on the liability side so as to always balance. As things are now, the capital assets and capital liabilities, as shown on the balance sheet, are inflexible, except through changes in the profit and loss account. This would still be true if stock were issued without a par value; but there would be this difference. As it is now, if a road has sold its stock at less than par, neither the asset side nor the liability side tell a true story, because the asset side has been made arbitrarily to correspond to the liability side. If stock were issued without a par value, the asset side would, unless there were a fraud, tell the truth, and from this a correct liability side could be worked out in terms of dollars and cents. This discussion applies particularly to the financing of new roads or the new purchase of property.

Assuming for a moment that the issue of stock without a par value would be desirable for new roads or new security issues, there remains the question of whether it would be desirable and practicable for companies which now have stock with a par value to call this in and issue new stock without the dollar mark in its place. The majority of bankers and corporation lawyers who had made any study of the question did not think there would be any insurmountable or even any very great practical difficulties in the operation of a law which would permit the conversion of par value stock into non-par value stock. Judge Lovett was asked what should be done to the asset side of a balance sheet in case the company made such a conversion of its stock. He said that in his opinion the asset side should be changed so as to show at what price the stock was taken over. To take a concrete case, if a company's stock were selling at 80, and there were \$1,000,000 par value outstanding, the asset side of the balance sheet would show an investment of \$800,000 and 10,000 participation certificates might be issued, each one to be exchanged for \$100 par value of old stock. In the case therefore of companies whose stock was selling below par the asset side of the balance sheet would be reduced, and in the case of companies whose stock was selling above par the asset side would be increased. Such a process as this would seem to give the Interstate Commerce Commission its long

sought valuation. It would not be a physical valuation, but it would be a market valuation. It would serve equally well as a peg from which to start accounting along the lines prescribed by the commission.

Those who favored forbidding the issue of stock below par did so on the ground that it was a deceit. Those who thought that such a law would do very much more harm than good based their opinion in part on the belief that unless new lines could be financed through the issue of stock either as a bonus to be given with bonds or to be sold at very much less than par, a serious check would be given to speculative railway building. This need for speculative building was somewhat fully discussed in the comments on the testimony before the commission as to the advisability of federal or state regulation (*Railway Age Gazette*, June 2). As was stated before, most of the witnesses agreed that speculative railway building was highly desirable for the development of the country. It was pretty clearly shown that it is impossible to induce money to invest in a speculative venture without holding out the hope of a return quite disproportionate to any rate of interest that could properly be paid on a bond. Investors and speculators have certain well understood prejudices and conventions that cannot be disregarded. One is that a bond carrying a very high rate of interest is to be distrusted. Roughly speaking a man who buys a 10 per cent. 5 year \$1,000 bond at par makes a profit in five years of something over \$500, and a man who buys a 5 per cent. 5 year \$1,000 bond at par and gets \$1,000 par value of stock as a bonus which is worth \$260 at the end of five years, makes a profit of something over \$500; but experience has proved that the latter method of financing is practicable and the former one is not practicable.

There was one question that the commission repeatedly asked those who testified before it and to which apparently it got no very satisfactory answer from any one witness, although from the importance of the question it is probable that the commission will feel itself bound to make some definite recommendation in regard to it. Given a railway company in the following situation: Through former bad judgment, mismanagement or some other cause, there is a bonded debt amounting to 75 per cent. of the present value of the property; in addition, there is stock outstanding with a par value of 50 per cent. of the present total value of the property. Assuming, now, that the company finds itself imperatively in need of more money to double-track a portion of its line, what can the management do? It will be noted that this situation has a good many points in common with the situation in which a receiver finds himself; and in the case of a receiver he applies to the court for permission to issue securities, which through the authority of the court become senior to all the securities now outstanding. It was the general opinion of most of the witnesses that in a case of this kind a road would not be able to issue junior bonds at any price that would be fair either to present bondholders or present stockholders; and if it were not allowed to issue stock below par there would really have to be a voluntary reorganization or the road would, in all probability, have to be put in the hands of a receiver.

Some of the dangers that might lie in issuing stock without a par value are the opportunities which it would open for stock manipulation; and the difficulties that a company might have in authorizing new stock. For instance, if a company sold 10,000 participation certificates originally at \$75 per certificate and later needed money but could only sell additional certificates at \$50, there might be considerable difficulty in getting present certificate holders to authorize an additional issue of certificates. It would appear, however, as if this difficulty could be overcome by offering the new certificates to certificate holders pro rata, giving them the chance to average down the cost of their holdings. As a practical consideration, Marvin Hughitt suggested that if the par value were removed from stock certificates, the small investor would be less likely to find stocks attractive,

because he would fail to understand what he was buying. When he buys a certificate marked with a par value of \$100 he feels that in some way he is buying a tangible \$100 worth of property, while if he were to buy simply a participation certificate—an interest in the general business of the company—he would be getting something rather beyond his comprehension.

The sale of bonds at a discount presents a question quite different from that of the issue of stock below par. From the company's point of view, the yield on the investment is the only thing in which it is interested. In other words, the price it has to pay for its money is what determines the sale of securities at any given time. It makes no difference whether a 4 per cent. bond is sold at a discount or a 5 per cent. bond at a slight premium, if the company has to pay $4\frac{3}{4}$ per cent. for its money it is in the same financial position whether it issues a 4 per cent. bond or a 5 per cent. bond. The discount is taken up over a series of years and to all intents and purposes is the same as interest.

The price which a company will have to pay for its money cannot be fixed or, in fact, influenced by a law or by the action of a commission.

A railway company has to bargain for its money in much the same way that any man would go about mortgaging his real estate. Its object is to get the greatest amount of money for the least interest payment possible, consistent with mortgaging its assets in such a way as to make future financing as easy as possible. It was the unanimous testimony of all of the bankers that market conditions for money are such that sometimes a road could get a loan at an actually lower interest by selling a 4 per cent. bond at a discount than it could by selling a 5 per cent. bond at a premium, or vice versa. Most of the witnesses conceded that the sale of bonds is such a delicate and highly technical operation that it could be much more advantageously carried out by a board of directors free from the immediate supervision of a commission or the restriction of any laws.

The members of the New York Public Service Commission and of the Massachusetts commission did not concur in this view. In both Massachusetts and New York the law provides that the commission may fix a minimum at which bonds can be sold. The members of the New York commission cited an instance in which a certain railway had come to them and asked permission to issue bonds at a certain figure, say 79, and that the commission had refused to permit the issue of these bonds unless the company could get a higher price, say 83, for them, and that the commission by standing firm had succeeded in actually getting the higher price for the company for its bonds. One is led to surmise that this was a particular case, in which the bankers who were to buy the bonds were already so deeply interested in the other outstanding securities of the company that they were in a position which permitted the Public Service Commission to coerce them to a quite extraordinary degree.

The question of publicity was viewed quite differently by different witnesses. It was conceded, however, by most that there ought to be a certain amount of secrecy about any business transaction of this kind while the negotiations were still pending, but that it was desirable and only right that eventually full publicity should be given to the whole transaction. The differences in opinion as to publicity lay largely in the question of how soon after the negotiations for security sale had been closed the company should be compelled to make public its record and as to the amount of detail that should be required.

"Happy Arabia," known now as Yemen, is to have a railway, extending from the Red Sea at Hokeidah, which is about 150 miles north of the outlet of that sea, into the interior 73 miles to Obal. It is hoped to eventually continue it further to the plateau east of the coast range, but to do this a pass 9,500 ft. above the sea must be reached. A harbor also is to be constructed 10 miles north of Hokeidah, which is about 500 miles south of Mecca, which will be the terminus of the nearest line.

CHICAGO PASSENGER TERMINAL OF THE CHICAGO & NORTH WESTERN.

The new passenger terminal of the Chicago & North Western in Chicago was opened for traffic Sunday, June 4, and since 6 a. m. of that date all the through and suburban trains have been operated into and out of the new station. The terminal includes two new approaches, the north approach being about one mile long and the west approach about $1\frac{1}{4}$ miles long; in addition to the station building and train shed, which occupy the blocks between Madison street and Milwaukee avenue and Clinton and Canal streets.

The station proper is 320 ft. x 218 ft., and is four stories high. In addition to the main entrance on Madison street, there are six other public entrances, giving easy access to all parts of the building from any direction. The walls are gray Maine granite and the column shown in the photograph of the Canal street entrance is marble. The inner vestibule of the Madison street entrance is shown herewith. The entrance to this vestibule is



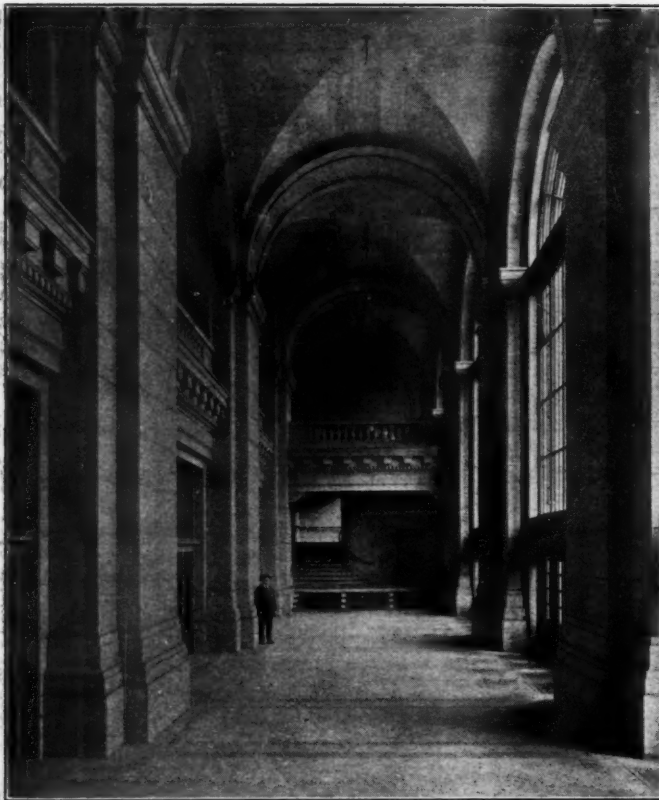
Canal Street Entrance.

through three large arches, each containing five bronze and glass doors. Corresponding doors lead from the vestibule into the public court. This court is ample in area to accommodate travelers while transacting all business incident to a journey. The ticket office contains 33 selling windows and is provided with every facility for serving the traveling public promptly. In addition to the ticket office, the other conveniences grouped around this court include a lunch room, public telephone booths, drug store, telegraph offices, information bureau, parcels check room, automobile and cab booths and baggage room. The broad stairway shown at the left, in the view of the public court, leads to the main waiting room on the floor above, a general view of which is shown. As an example of the care that has been taken to include every possible convenience in the design of this station, the lights on all stair landings should be pointed out. These lights can be seen in the photographs at the landing in the stairway leading from the ground floor to the main waiting room. Strong reflectors are provided which throw a

bright light on the landing, a point which is usually obscured by shadows.

The waiting room is treated as a Roman atrium with a barrel vault roof. The pilasters and the entire order up to the spring of the vaulted ceiling are of dull finished, light pink Tennessee marble. The columns are of Greek Cippolino marble of a delicate green hue. The ceiling is of self-supporting tile construction with ribs of terra cotta, ornamented with symbolic designs. The lighting includes clusters of high power incandescent lights supported on solid bronze fixtures and a complete system of in-

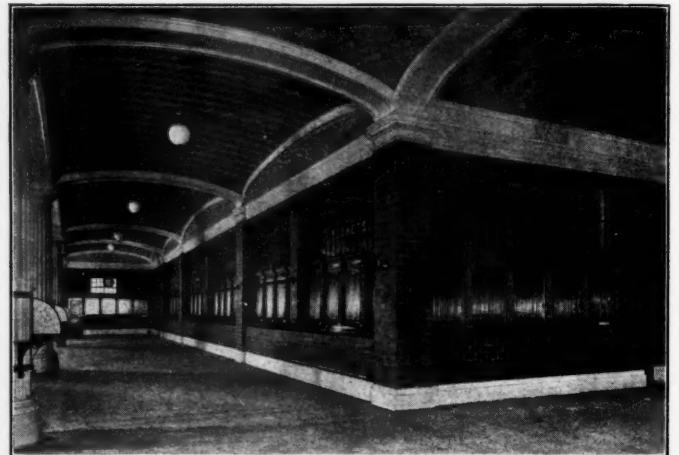
Adjoining this ladies' waiting room is the main dining room. The architectural treatment of these rooms harmonizes with the general scheme of the interior and the lighting is by the indirect system, which supplies a soft, light without any shadows. The service in the dining room is from a kitchen on the floor below, the equipment of which is equal to that of the kitchen in any metropolitan hotel. At the east end of the main waiting room is the barber shop, newsstand, smoking room and public and pay toilets. On the third floor are provided ladies' rest rooms, dressing rooms, wash rooms and baths, a ladies' tea room, and the nurse's and matron's rooms. Adjoining the latter room is a physician's office and emergency department. The facilities for hospital and emergency service are very complete and are furnished free of charge. On the same floor are the men's lounging room, men's barber shop and bath rooms. This service is designed so that a suburban patron can change to evening



Inner Vestibule on Madison Street.

direct lighting, concealed behind the cornices. The large clock shown at the end of the waiting room is one of thirteen located in different parts of the station and controlled from one master clock. The ventilation of this room, as of every other part of the building, is effected by a forced draft system which completely changes the air in the building every 20 minutes. The mahogany settees in the waiting room are all numbered for the convenience of patrons in making appointments in this room.

A separate waiting room for ladies is provided at the west end of this floor, a corner of which is shown in a photograph.



Ticket Office.

dress and keep his evening appointments without the necessity of going home.

From the main waiting room entrance is had directly to the train shed concourse. This concourse is as substantially built as any other part of the building and will be heated in winter to a temperature of 60 deg., allowing passengers to wait for their trains in comfort. The train announcing boards, shown on the left, are operated by a perforated ribbon somewhat similar to a piano player record, by which only the names of towns at which a train stops are displayed on the board. The balcony at the right of the picture is for the train announcer. The heavy sliding doors at the left of the picture open into the train shed. This shed is the Bush type. There are 16 tracks in the shed, which covers an area of 265,800 sq. ft. As shown in the photograph, the floor construction is concrete throughout, allowing the space between the tracks to be flushed and kept in a perfectly clean and sanitary condition. Belt conveyors are pro-



Public Court on Ground Floor.



Corner of Women's Waiting Room.



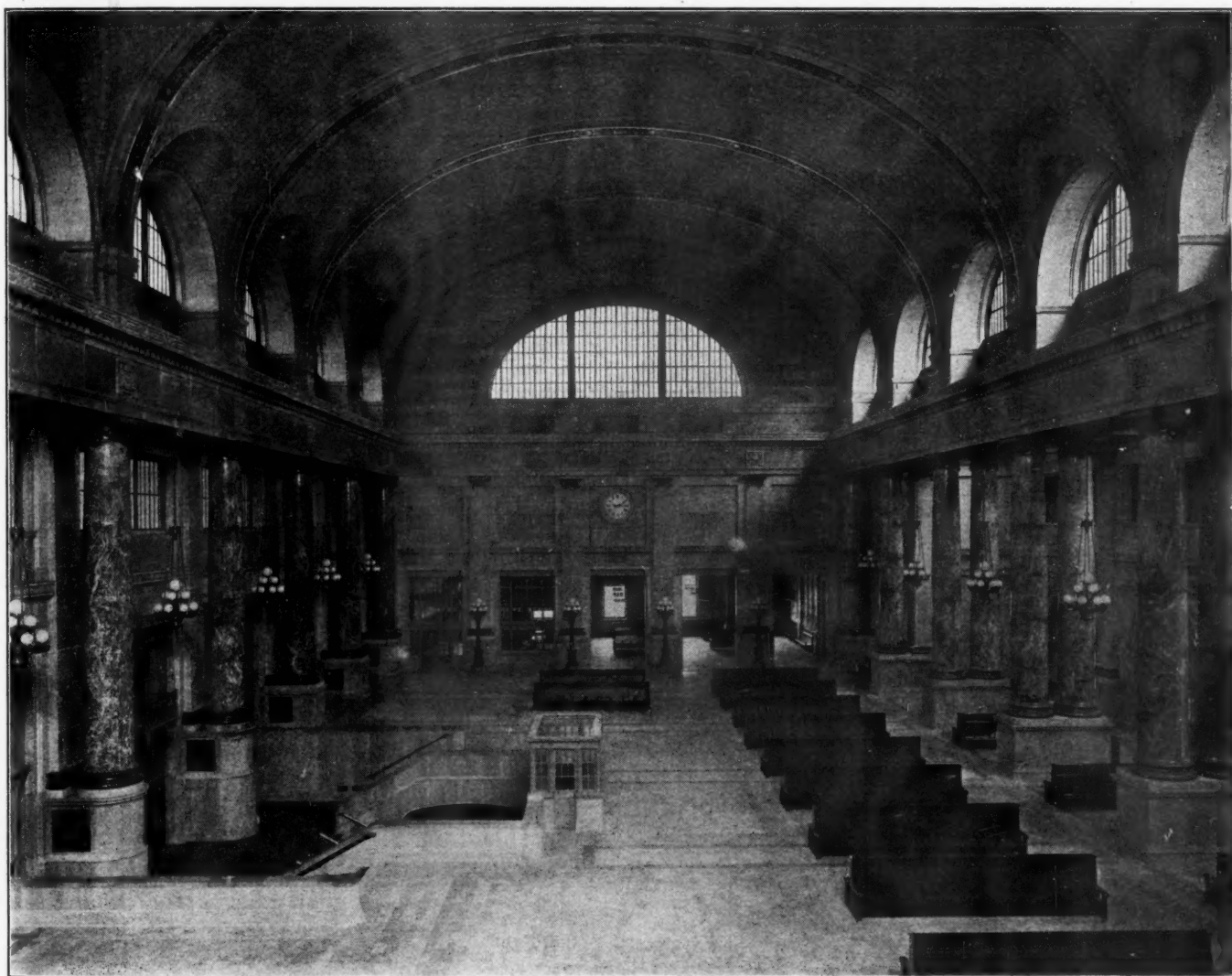
Main Dining Room.

vided between tracks on to which mail sacks are thrown direct from incoming mail cars. These conveyors carry the mail to the post office sub-station below the train shed. In addition to the post office the space under the train shed includes baggage and express rooms, cab and automobile stands and quarters for immigrants. The facilities for the immigrants are very complete, including a lunch room where good food is served at a low price, complete baths and toilet for men and women and wash

rooms, including steam dryers whereby the immigrant women may do the washing for their families and have it dried while they wait.

A suburban concourse midway between Randolph and Washington streets, and extending the complete width of the station, furnishes entrance to the main shed without requiring suburban patrons to go through the station proper.

The original studies on the plan of this terminal were begun



Main Waiting Room, Looking East.



Concourse, Looking East.

in December, 1905, under the direction of Marvin Hughitt, at that time president and now chairman of the Chicago & North Western. The work of making detail plans and of wrecking buildings on the new right of way was begun in November, 1906. The raising of the Chicago & Oak Park elevated, which crosses the station tracks on Lake street, was begun in June, 1908. In September, 1908, construction work on the approaches was started, and in November, 1908, construction work on the station buildings was commenced. The approximate cost is as follows:

Real estate and legal expenses.....	\$11,560,000
Station building and train shed.....	6,380,000
Power station building and equipment.....	810,000
Elevated approaches	5,000,000
Total	\$23,750,000

For the benefit of those who may desire to refer to previous descriptions of special features of this terminal the following list of articles have appeared in the *Railway Age Gazette* is given:

General description of the arrangement of station building prepared from architects' studies, August 14, 1908.



Train Shed.

Complete description of the Bush train shed, July 16, 1909. Photographs showing progress, February 11, 1910.

Description of the raising of the Oak Park elevated, the building of subway bridges and approach, with especial reference to their waterproofing, further details of the arrangement of the station and complete description of the power house with its equipment, July 15, 1910.

Details of construction, with progress photographs, March 23, 1911.

STUDIES IN RAILWAY ECONOMICS.

IX*.

BY W. M. ACWORTH.

Let us assume then that Lord Collins is right in saying that—at least when a Law Court has to decide the question—"the reasonableness of the charge must be measured by reference to the service rendered and the benefit received, which is unaffected by the prosperity or misfortune of the parties to the contract." "The affluence or indigence of the person rendering or receiving the service is beside the question." Let us see how this has been worked out in practice before the English Commission Court. The English commission has indeed so far been spared the task of deciding what is a reasonable rate *per se*. Parliament has fixed by statute the maximum rates and charges which the companies are entitled to make, and the court presumes that all charges within that maximum, provided that they have not been increased since 1892, are, apart from the question of undue preference, reasonable. It is only where a change has been made since 1892 that the court has jurisdiction to decide as to the reasonableness of the increase.

"The main element," says Lord Collins, "in such determination must be the expense to the carrier." But, with great respect, it would seem that, if "the service rendered and the benefit received are unaffected by the prosperity or misfortune of the parties to the contract," if "the affluence or indigence of persons receiving the service is beside the question," the expense to the carrier becomes not only "the main element," but the sole element in deciding whether an increase is reasonable. And so the decisions of the court in particular cases have worked out in practice. The companies have again and again endeavored to put in force an increase, and have succeeded or failed according to whether they could or could not prove that the expense of working the particular traffic to which the increase was applicable had increased. The companies' total net revenue may or may not have increased; the trade in the particular article on which an increase is proposed may be in the heights of prosperity or the depths of adversity; it matters not. Provided the company can satisfy the court that the ratio of operating expenses in the case of that particular traffic, has increased from causes of a not merely temporary nature, sanction to an increase of rate, proportionate to the increase of expense, almost automatically follows. Of all obligation to consider the question from a commercial or economic aspect the court almost ostentatiously washes its hands. "We are not a court of conciliation, or a tribunal of honor; we are not made judges of prudence or of generosity." Railways are "as traders, entitled like other traders to push their business to the best advantage." Far be it from me to presume to say that this is not good law, or even that, acting as a court of law under the statute that conferred the jurisdiction, it would have been possible for the railway commission to adopt any other course. But, regarding the question from the economic standpoint, and considering not what the law is, but what it ought to be, an economist is entitled to say that it is bad economics, and, I add, bad business.

It is surely unnatural that a tribunal of appeal should refuse to take into consideration the very matters that would be upper-

most in the mind of the person who had to decide in the first instance. And, assuredly, the first thing that a railway manager takes into account, and ought to take into account, is the ability of the traffic to bear the rate; which is really "its effect upon the trade of the persons who have to pay it." To charge what the traffic will not bear, at least beyond the point which leaves the railway some profit on the transaction, is to sin against the first canon of railway rate making. But this, says Lord Collins, "is a question of railway management, which in my judgment lies outside our province." The result of a manager increasing rates from one set of considerations, and a court deciding as to the reasonableness of the increase from another set of considerations, is curiously unreasonable. The court has in more than one case sanctioned increases made by the railways in coal rates. That an increase in the cost of carrying coal has therefore been proved we may take for granted; but it by no means follows, either that the coal trade is in a good position to bear the increase, or that the companies, if left to themselves, would have tried to recover their loss in net revenue by increasing the charges on coal. It is much more probable that they would have followed the line of economic least resistance, and have put up their rates for silks and cigars and grand pianos, where there would have been no fear of killing the goose that laid the golden eggs. Indeed, it is quite conceivable that the very fact that the companies' expenses in carrying coal have increased is economically a reason why coal rates should be reduced. Take this case: The cost of raising coal in England has been increased by the introduction of the statutory eight hours' day for miners. This has raised the cost of locomotive coal to the companies, and so increased their working expenses. But, simultaneously, it has weakened the competitive position of English coal in foreign markets and, accordingly, a coal trader with a diminishing demand, bound to cut his profits or lose his trade altogether, is less able than before to pay even the old rates, let alone the new ones. Economically speaking, a railway should rather reduce these rates and thus help the trader to recover his imperilled position and so to balance a profit on a large tonnage against his smaller profit per ton. But can a legal decision be justified which puts a railway manager between the devil and the deep sea—which compels him either to accept a reduced net revenue or to raise it at the point of maximum resistance? Of course, the position may in practice be worse than this; for permission to raise increased revenue by advancing rates on traffic which the manager knows cannot bear an increased rate, and on that alone, is tantamount to a refusal to permit any increase of revenue at all.

But, though it is easy to see the economic unsoundness of the present position, it is difficult to see how a court of law could avoid it. It is clear that when a railway company has justified its claim for new net revenue, it ought to raise that revenue from the traffic that can best bear it. But how by legal procedure, with its definite parties, and precise issues, and sworn evidence, can that fact be ascertained? It is equally impossible to bring all the traders of the country before the court and to decide questions vitally affecting their interests in their absence. The moral would seem to be that, if the real question is one that cannot from its very nature be properly decided in a law court, a law court is not the proper body to decide it. On the other side of the Atlantic they seem to be gradually working out a system of regulation which is much more logical in theory, and which is likely in the long run to be much more satisfactory in practice.

The longest regular locomotive run without a stop in Germany is now between Berlin and Hamburg, 178 miles, which is made by two trains daily, one in 3 hours and 20 minutes and one in 3 hours 22 minutes. The longest locomotive run without a stop in France is 163 miles. The longest run without a stop in England is 224 miles. The English run is made by engines which take water while running.

*Previous articles in this series appeared in issues of the *Railway Age Gazette* of January 6, 13, 20, 27, February 3, May 19 and 26 and June 2.

CONTROLLING MODERN PASSENGER TRAINS.*

With the introduction of heavy (125,000 lbs. to 150,000 lbs.) passenger cars, the brake force required to control such cars with approximately the same effectiveness as is obtainable with the apparatus used on lighter cars became so great as to exceed

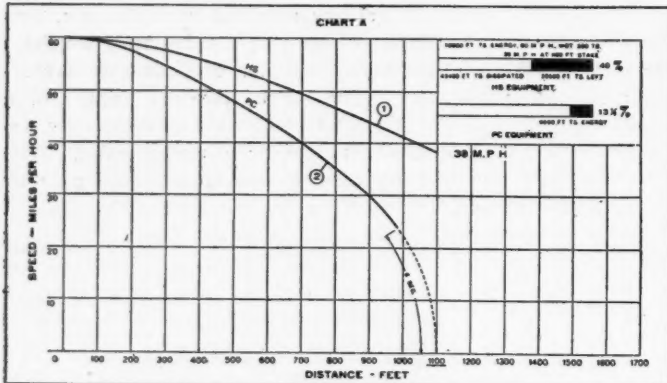


Fig. 1.

the capacity of a single brake cylinder even with the highest brake cylinder pressure and greatest multiplication of its power by leverage that could be permitted. The increased speed, the weights of trains and the economy of time necessary for the highest operative efficiency under modern severe traffic demands, together with the increase in length of trains and the much greater volume of air which must be handled through the brake pipe, have imposed conditions which the type of brake adequate for past conditions has been unable to meet satisfactorily.

While a high maximum emergency stopping power is required to insure the safety of passengers and rolling stock, the ordinary service functions and automatic safety and protective features became hardly secondary in importance. The necessity for a different treatment in the application of braking or retarding forces on modern heavy passenger cars than that heretofore practised is outlined in the report of the committee on Train Brake and Signal Equipment of the M. C. B. Association, 1910, and in a paper before the New York Railway Club, April 16, 1909, entitled Development of Air Brakes for Railroads, as follows:

Increased unbraked locomotive weight.

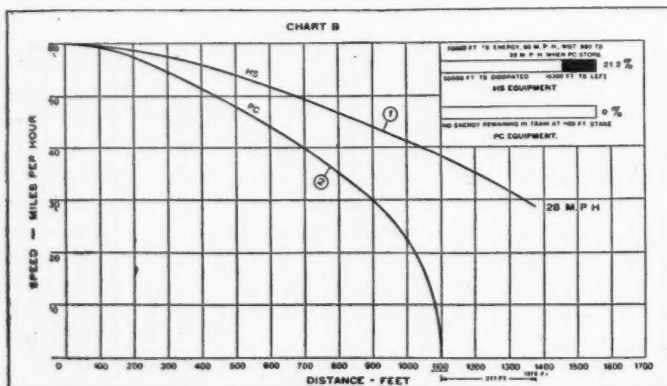


Fig. 2.

Increased train momentum.

Increased brake rigging deflection and false motion, due to severe stresses in car members and other causes, which greatly increase the piston travel.

Increased brake leverage ratio, with consequent increased piston travel and lower maximum cylinder pressure.

*Abstract of a paper presented before the Air Brake Association by Walter V. Turner of the Westinghouse Air Brake Company; also an account of the discussion.

Increased time to obtain brake effectiveness, on account of large cylinder volumes.

Decreased brake shoe coefficient of friction due to greater brake shoe pressure and speeds.

Possible breaking down of the brake shoe under the severe conditions imposed.

Capacity of single cylinder type of brake equipment exceeded.

Excessive amount of air used when releasing and recharging.

Some of the operating conditions involved in the committee's considerations which are not directly mentioned in the report are greater frequency in trains, increased number of parallel tracks and higher speeds with the same distances between signals as formerly. These introduce problems which are primarily for the operating department to solve but must be given no less consideration by the mechanical department. As a result of a thorough consideration of these conditions by the representatives of various roads and others, interested whose conclusions were confirmed and recommendations tested by one of the most significant series of brake tests ever held, viz., the Lake Shore emergency brake tests of 1909, certain requirements were established as essential in modern high speed, heavy passenger train service. On this basis the PC passenger brake equipment was developed to meet the requirements referred to, by combining the ordinary functions of the quick action triple valve with such other operative features as were found necessary.

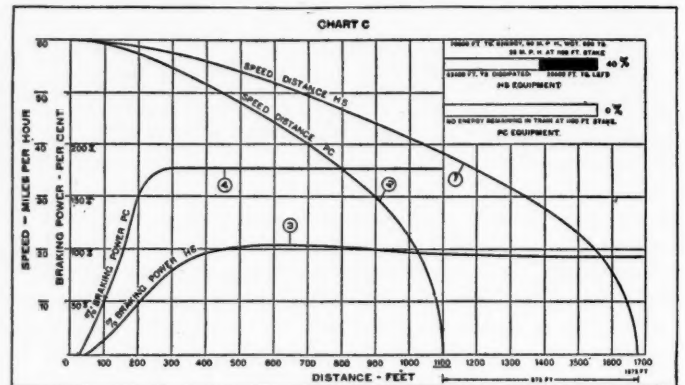


Fig. 3.

These novel characteristics and functions are described in the report and papers above referred to.

As a contrast to the PC equipment, let us take, for example, a modern train equipped with two old style equipments per car, of which, unfortunately, there are a number in service. A 10-car train equipped with 16-in. cylinders requires a volume of 150,000 cu. in., if the old size of auxiliary reservoir is employed. Moreover these triple valves have large feed grooves, which, combining as the triple valves go to release, make it impossible to raise the brake pipe pressure at a greater rate than the auxiliary reservoir is increasing; that is, as each triple valve goes to release, the rate of rise becomes less and less. Therefore, the succeeding triple valves are less likely to go to release position, and it will be appreciated that when 19 triple valves of the 20 on such a train have gone to release position, that the twentieth one must be in the best of condition, as regards ring leakage, if it is to release. The fact that it is not already released indicates that the ring condition required does not exist. From what has been said it will be seen that unless the car itself carries an air supply that will raise the auxiliary reservoir pressure at the same rate as the brake pipe is being raised until almost the maximum pressure has been reached, that an immense volume and large pump capacity must be a part of the engine equipment and that extreme care in manipulating the brake valve by the engineer will be required if the release of the brakes is to be insured and reapplication prevented. A large volume of air carried under the car may be said to be a panacea for the prevention of stuck brakes, so called.

A prolific source of trouble in this direction comes from the practice of running double header trains. The pump on the leading engine may be capable of furnishing an air supply ample for the operation of such trains as the single locomotive can handle, but was never intended to satisfy the extra demands imposed by the double header train. If the pump capacity is not sufficient to meet these demands, or if means are not available for utilizing the pump supply on both locomotives, it is plain that trouble from "stuck brakes," failure to release, etc., will result. The only safe way to permit the main reservoir and pump on the second engine to be utilized in assisting the head engine in releasing and recharging is to provide a main reservoir pipe and connections by which the main reservoir on the first and second engines can be connected, thereby enabling the engineer on the head engine to utilize the air stored in the main reservoirs of both engines.

Another fact which should not be lost sight of is that the engineer, if not familiar with the characteristics of the PC equipment, may make excessive reductions and so cause quick action to take place, with resultant wheel sliding. This does not mean any shortcoming in the equipment (quite the contrary) but a very dangerous and improper operation on the part of the engineer, since he is gaining no additional braking power by such an operation, but is blowing away through the reducing valves and safety valves the additional air which should be held in reserve and is absolutely necessary if an emergency should arise. Of course after such an application of the brakes the same condition exists as in an emergency. That is, at least 90 lbs. of air must be in the brake pipe before a release can be obtained.

With the greatly increased sensitiveness to release, as demanded by the changed conditions already referred to, which tend to produce a very slow rate of rise of brake pipe pressure when releasing and recharging, especially toward the end of a long train of heavy cars having large reservoirs, it becomes necessary to provide the maximum sensitiveness to an increase in brake pipe pressure, in order to insure all valves in the train responding as intended. The elimination of the graduated release feature is specially provided for in the construction of the valve. During the transition period when graduated release equipment is likely to be handled in the same train with cars not equipped with a graduated release brake, especially where long trains are handled and the air supplies from the brake pipe are likely to be limited in any way from any cause, it is usually best to cut out the graduated release feature until all cars are furnished with this type of brake. All that is required to change the PC equipment from the graduated to a direct release brake or vice versa, is the loosening of a bolt and turning of the direct and graduated release cap on the front of the control valve head until the desired position is indicated, the bolt being then retightened. It should be further stated that all functions mentioned have been so combined that the requirements of interchangeability with existing equipments have been fully satisfied.

As an illustration of what was accomplished by the improvements just outlined, the curves on charts A, B and C contrast the performances of the quick action automatic brake with high speed reducing valve and the passenger control equipments. The stops shown are from a speed of 60 m. p. h., with a representative train of one locomotive and six modern passenger cars, the total weight of the train being 590 tons. Fig. 1 represents the PC train stopped at the 1,100 ft. mark, and the high speed train passing it at a speed of 38 m. p. h. (63 per cent. of its initial speed) at which point 40 per cent. of its original energy still remains to be overcome before the train is stopped. It will be noted that the latter portion of the curve 2 is dotted to indicate that the train with the high speed brake equipment reached the 1,100 ft. point six seconds before the train with the PC equipment came to rest at that point.

Fig. 2 shows that when the PC equipment train has come to a standstill the high speed equipment train has run 275 ft.

farther and is still running at the speed of 28 m. p. h., representing 22 per cent. of the original energy. Curves 1 and 2 of Fig. 3 illustrate the relative drop in speed as the trains approach the stopping point and show finally that the train with the high speed brake equipment ran 575 ft. further than that equipped with the PC brake. Curves 3 and 4 show the relative percentage of braking power developed on the train by the two equipments and illustrated at once why the PC train stopped in the least distance and time. The three cardinal advantages of the PC equipment are vividly illustrated by these curves, namely:—The much higher percentage of emergency braking power obtained; the rapid rate at which maximum braking power is obtained; the maintenance of maximum braking power throughout the length of the stop.

Two brake cylinders are used per car; only one cylinder operates during service applications, but both are brought into play when an emergency application is made. This gives the necessary increased braking power for emergency applications, not by an increased pressure in one brake cylinder (as in previous equipments), but by bringing the same brake cylinder pressure to act upon the pistons of two brake cylinders instead of one. This means that double the maximum service braking power is obtained in emergency applications.

Discussion.—L. H. Albers of the New York Central referred to the Toledo tests, which demonstrated conclusively that the ordinary passenger brake equipment was not equal to the demands of modern service and heavy cars. The P. M. and L. M. Westinghouse equipment requires about 14 seconds for full application on a ten-car train making a stop from 60 miles an hour, while the new PC equipment with 180 per cent. brake power fully applies the brake in 3 seconds. An important feature is that the maximum retarding force is retained to the end. This brake also allows a leverage of 6 to 1 to be used, so that 18 in. cylinders are sufficient, and such leverage insures proper brake beam clearance. The importance of sufficient brake beam clearance is demonstrated by the fact that dynamometer tests have shown that an increased tractive effort of 35 per cent. is required for operating trains where the leverage is such that the brake shoe clearance is small.

The new equipment also secures uniform brake power on all cars. This is important, as the lack of this uniformity is the prime cause of shocks and wheel sliding. The PC equipment is also more easily released as a differential of 6 lbs. in the release valve is required for its operation. The PC equipment has been in service on the fast trains of the New York Central for over a year, and its operation has been very satisfactory. When the equipment was put on in winter time and the men were not entirely familiar with it, there was some difficulty from slow release, which was traced to the graduated release of the old valves. The re-designing of the release valve has removed all these troubles. It is understood that the Pullman Company is now fitting its cars with the PC brake equipment.

For some time the earnings of the German railways have been increasing and the gain in 1910 was, for that country, very large. The fiscal year of most of them ends with March, and the returns for last year have recently been published. The increase was just about 7 per cent., passenger earnings growing only 2¾ per cent., but freight earnings more than 8 per cent. The lines so reporting include more than three-fourths of the whole German system. In the month of March the total of all German lines had an increase of more than 7 per cent., a decrease of nearly 9 per cent. in passenger earnings, having been counterbalanced by an increase of 10½ per cent. in freight earnings. The Easter travel came in March last year and not till April this year, which accounts for the large decrease in travel. In Germany everybody goes somewhere in the Eastern holidays. The indications are that on the whole Germany has fully recovered from the depression of 1907.

LETTERS FROM AN OLD RAILWAY OFFICIAL TO HIS SON, A GENERAL MANAGER.*

III.

CHICAGO, April 22, 1911.

My Dear Boy:—Did it ever occur to you how easily a bright lawyer could tangle up many an able railway official on the witness stand? Nowadays we have to spend more or less valuable time testifying about service, rates, capitalization, valuation, practices, methods, and a score of other things that become of public interest. Whether this is just or unjust, necessary or unnecessary, is beside the question. It is a condition, not a theory, that confronts us. The wise railway man, therefore, so orders his official life that it may endure the scrutiny of both the persecutor and the prosecutor, of both the inquisitor and the investigator, of both the muckraker and the political economist. It sometimes happens, since men are only boys grown tall, that public hearings are accompanied by stage settings for dramatic effect; that trifling inconsistencies are magnified into egregious errors. Let me picture part of such a hearing with a general manager on the stand:

Question: You testified, Mr. General Manager, on the direct examination that your road is well managed and has a highly efficient organization, did you not?

Answer: Yes sir, we think we have one of the best in the country.

Q. Would you mind telling the able members of this Honorable Commission in just what your superiority consists?

A. Not at all, sir. In the first place we have a great deal of harmony and work very closely together.

Q. Did you ever know a railway official who did not claim the same thing for that part of the organization over which he presided?

A. (Hesitating.) Well now that you mention it, I can't say that I ever did. (Sudden inspiration.) But you know there is a great deal of bluffing in this world.

Q. (Drily.) What style of anti-bluffing device has your company adopted?

A. Of course you are speaking figuratively. Such a thing isn't possible. We have a pretty good check in the fine class of men we have developed.

Q. Then it is sort of a breeding process?

A. Yes sir, that's it.

Q. To go a little further, has your company any patents on improving human nature?

A. No sir, we don't claim that.

Q. Is it not a fact that your officials and employees are average citizens recruited and developed about like those of other roads?

A. That is hardly a fair way to put it, but I suppose they are.

Q. Why isn't it fair?

A. Because it leaves out of account the acknowledged efficiency that comes from having men well treated and contented, and better instructed than others. Some farms make more money than others because the old man gets more work out of the boys.

Q. Then your road has officials who can radiate more divine afflatus than others?

A. I didn't say that. We do the best we know how.

Q. What is organization?

A. Why organization is — let me see — why, organization is the name we use for the men—the people, the forces we hire to run our road. It is hard to give a concise definition. I might ask you what law is.

Q. That's easy, law is a rule of conduct. Now tell me, please, who run the road?

A. Why the officers run the road, the men do the work.

Q. Did you not just say that you hire men to run the road?

A. I didn't mean that.

Q. Then in your business you are not very accurate. You say one thing and mean another.

A. No sir, we may have more sense than you think we have. We spend a lifetime at this business and must learn something about it.

Q. Will you please tell this fair-minded commission just how you run the road, just how you attempt to minister to the needs of the intelligent people of this great commonwealth?

A. Now, sir, it is a pleasure to testify. You are getting away from definitions and technicalities and down to practical facts where I feel more at home. I will be glad to tell you all about it. In the first place a railway is such a big affair that we divide it into departments.

Q. Excuse me, what is a department?

A. A department is — well, — I can make it clearer by describing what it does. As I was saying, we divided it into departments, and a department is — well — a department is — why, something so different from everything else that we put it off by itself and hold the head of the department responsible for results. We are very particular not to interfere with the details of the departments.

Q. Pardon me, but the present members of this exceptionally able commission, inspired further I may say by the example of our patriotic governor, are accustomed to give profound consideration to these great questions. (Modest pricking up of ears of commission, with determined composite expression bespeaking relentless performance of a dangerous duty.) Please, therefore, tell us what your department does.

A. As I testified on the direct examination mine is the operating department; as general manager I have charge of operation.

Q. What does that include?

A. It includes transportation, and maintenance and new construction. It handles the business the other fellow gets.

Q. Who is the other fellow?

A. The traffic department.

Q. Of another company?

A. Why, no, of our own. It is just another department. It deals with the public, it gets the business, it makes the rates; excuse me—it recommends rates to honorable bodies like this commission.

Q. Then you in the operating department don't deal with the public?

A. Yes, sir, we do, more and more every year.

Q. Is the traveling freight agent in your department?

A. No sir, he is in the traffic department.

Q. Then you have no control over him?

A. No sir, no direct control, but as I said before we all work very closely together on our road.

Q. It is claimed that there has been discrimination in car distribution in this state, because a traveling freight agent promised more cars to some shippers than the latter were entitled to according to the supply available. How about that?

A. I am unable to say.

Q. Getting back to your narrative, please resume the interesting description of your department.

A. As I was saying, we have several departments, each under a superintendent or other officer. We have a general superintendent, a chief engineer, a superintendent of motive power, a superintendent of transportation, a superintendent of telegraph, a signal engineer, a superintendent of dining cars, and a general storekeeper, all of whom we call general officers in charge of departments.

Q. I thought you said you are the head of the operating department.

A. Yes, sir; that's right.

Q. I don't quite understand. You say that there are eight departments in your department?

A. Yes, sir; that is what we call them. It always has been so.

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Q. Then when is a department a department?

A. You see these are really not departments; they are just parts of the operating department which is really a department.

Q. Then, why not have definite designations?

A. I don't know. We have never thought it necessary. We are getting good results and giving good service to the public.

Q. What are results?

A. I am not sure; the longer I live the less certain I am about these things.

Q. I am glad to hear that. This impartial commission has been constituted because some railway officers tried to dictate what was best for this enlightened commonwealth. Now, tell us, please, what you think of the plan the United States government has of making the "bureau" the next unit of organization below the "department"?

A. I have never given government organization much attention. The part of the government that concerns me most is the Interstate Commerce Commission, which seems made up mainly of inspectors.

Q. Have you ever studied the organization of the federal courts, and of the army and the navy?

A. I can hardly say that I have studied their organization, but I have observed them some.

Q. Then you and your road do not give much attention to organization?

A. Perhaps not to theories. We are very practical. I never could see where a railway is like the government. They are very different.

Q. Is not human nature the same in its basic characteristics whether employed by a railway or the government?

A. I suppose that it is, but many things about a corporation are different.

Q. Is not the government the largest of employing corporations with its citizens as the stockholders?

A. Perhaps so. I would rather go on and tell you something practical about our work.

Q. Pray do so.

A. You see I am the responsible head, so that I insist upon being consulted about all important matters, and leave only routine affairs to be acted on by my subordinates.

Q. What are important matters, and what are routine affairs?

A. Why, the important things are those that I handle personally, and routine, well, routine is what comes along every day and is so well understood that it does not require my personal attention.

Q. Do you think any three men could agree upon what should be considered routine business?

A. I don't know. I had never thought of it that way. Many things have to be left to discretion. That is where judgment comes in.

Q. Whose judgment?

A. The judgment of the man handling the matter; in this case, my own.

Q. You have been here all day. Who is handling matters in your absence?

A. My chief clerk.

Q. You did not mention him before. What officer is he?

A. He is not usually counted as an officer, but is considered the personal representative of an officer.

Q. Does he sign your name?

A. Yes, sir; but puts his initials under my name.

Q. Suppose he forgets to put his initials. Could you swear to the signature in court?

A. I don't know. You understand that is only for routine business.

Q. Does he sign your name to your personal bank check?

A. No, sir; he does not.

Q. Then the company's business with the citizens of this state receives less careful attention than your own personal affairs?

A. No, sir; the company's business comes first with me. I am a poor man today.

Q. When you are away your chief clerk has to sign instructions to the general officers in your department?

A. Only routine matters.

Q. Does he receive a higher salary than they?

A. No, sir; a lower.

Q. What determines relative salaries?

A. Qualifications and experience.

Q. Then you have the less qualified and the less experienced man instructing higher officers.

A. It might seem so, but in our case we are very fortunate. My chief clerk is an unusual man, and is very considerate and diplomatic. He knows that I do not stand for inconsiderate requirements of others.

Q. From whom do you receive your instructions?

A. From our president.

Q. Always personally?

A. Not always; his chief clerk is authorized to represent him.

Q. Is his chief clerk as considerate for you as your chief clerk is for your subordinate officers?

A. That is a very delicate question. I would rather not answer unless the commission insists.

(Hearing adjourned for day. General counsel sends cipher telegram to president stating indelicacy of state officials is almost unbearable; that bankers and business men should petition governor to stop destroying credit of railways.)

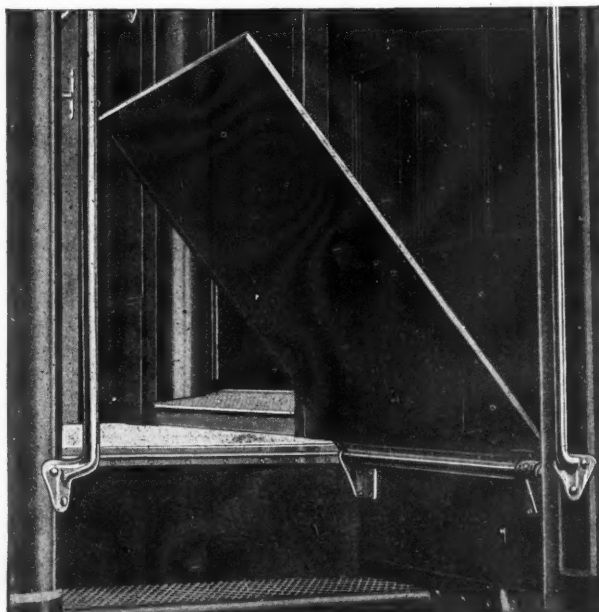
All of which, my dear boy, is not as bad as it sounds, but, through difficulty of explanation, points the way to desirable improvements in railway administration.

Affectionately, your own,

D. A. D.

VESTIBULE TRAP DOOR.

The trap door for car vestibules, shown in the accompanying illustration, is made by the O. M. Edwards Company, Syracuse, N. Y. It is a new type in which the ribs, formerly used on the under side, have been eliminated. These ribs are more or less objectionable where the door raises outside of the vestibule door,



Vestibule Trap Door.

especially when the trap door is used at low station platforms. It is necessary for the porter to clean off the bottom of the door so as to prevent the soiling of clothes in getting on and off the car and with the ribs it is difficult to clean the door quickly. The makers claim it is amply strong without the ribs.

General News Section.

The Lower House of the legislature of Florida has rejected the Davis Railway Commission bill which had been passed by the Senate unanimously.

The Southern Pacific has substituted a motor car for its steam locomotive and cars running between Reno, Nev., and Fallon, 62 miles. One round trip is made daily. Fallon is on a branch 16 miles from the main line.

The Lehigh Valley Transit Company, Allentown, Pa., has raised the pay of its 500 conductors and motormen one cent an hour; this in recognition of the fact that during the past year the company has carried 24,000,000 passengers without a fatal accident.

The new union passenger station at Worcester, Mass., which has been under construction for the past three years, was opened for business last Sunday. It is used jointly by the Boston & Albany, the New York, New Haven & Hartford, and the Boston & Maine.

The Pittsburg & Lake Erie has ordered from the Western Electric Company 15 telephones, selectors and auxiliary apparatus to equip two train despatching circuits; one from McKeesport, Pa., to Brownsville, 40 miles; and one from McKeesport to Connellsville, 43 miles.

A new three-story Railroad Y. M. C. A. building has just been opened at Waterville, Me. The building is of brick and contains a dormitory with 57 chambers, besides the usual facilities, including a restaurant, which is open to the general public. J. B. Northcott is secretary.

The educational bureau of the Union Pacific has been enlarged so that its facilities will be available for the employees of the Illinois Central throughout the lines of the Illinois Central system. D. C. Buell, the chief of the bureau, will continue to have charge of its operations on both the Union Pacific and the Illinois Central.

The Rock Island Lines are furnishing employees with printed instructions on "How to Save a Nickel a Day." The second bulletin on this subject, which has just been issued, is directed particularly to freight handlers, calling their attention to little mistakes which are common in freight houses and which result in loss and damage claims.

Near Niagara Falls, N. Y., one night last week, robbers stopped a freight train of the Erie Railroad, by threatening the engineman with a gun, and stole merchandise from several cars, to the extent, it is said, of a carload in all. It is said that there were six men in the gang and that they carried away their booty hastily in wagons.

George F. Samuel, formerly assistant city engineer of the City of Chicago, has been appointed engineer of track elevation for the city. Mr. Samuel has been engaged in municipal work since his graduation from the University of Michigan in 1885, and has been connected with the City of Chicago since 1888. He has been in charge of construction of waterworks tunnels and pumping stations.

Three cent fares now prevail on the street cars of Cleveland for all journeys, the city council having ordered a reduction to this amount and the directors of the Cleveland Railway voting to obey the order under protest. Hitherto, the fare for single rides has been three cents, but for a ride including a transfer, it has been four cents. The same regulation is continued, but the extra cent paid for the transfer is refunded to the passenger on the second car.

L. S. Berg, of New York City, president of the New Orleans, Mobile & Chicago, was seriously injured in a derailment near Vergas, Minn., on the night of June 2, and his wife was killed. Mr. and Mrs. Berg were in their private car, attached to train No. 109 of the Minneapolis, St. Paul & Sault Ste. Marie, which was ditched at a washout about 11 p. m. Eight of the eleven cars in the train ran off the track and three cars were completely destroyed by fire.

Negotiations between officers of the Southern Railway and representatives of blacksmiths, boilermakers, sheet metal workers and other employees in the shop car departments, have resulted in increase in wages ranging from 1½ cents to 3 cents an hour. It is said that this settlement affects about 8,000 men, including employees of lines controlled by the Southern; and that when the increase is granted by other lines in the southern states, which is confidently expected, 9,000 more will have the benefit of it.

A "harmony" dinner was given at St. Joseph, Mo., on May 31, by the Commercial Club and the Business Men's League of that city, the purpose being to bring about more harmonious relations between the roads serving St. Joseph and its business men. Speeches were made by B. F. Bush, president of the Missouri Pacific; H. U. Mudge, president of the Rock Island Lines; Gardner Lathrop, general solicitor, Santa Fe; O. M. Spencer, general solicitor, Burlington, and C. S. Gleed, president, Missouri & Kansas Telephone Company.

The Maine Central has just received a new steamboat which is to be used on the Bar Harbor route this summer. She is named the Moosehead, and is so much more powerful than the older boat that new and faster schedules will be adopted for that route. The Moosehead cost about \$130,000, and was built at the Bath Iron Works. Her dimensions are: Length over all, 194 ft. 11 in.; length on load water line, 185 ft. 2 in.; beam over guards, 36 ft. 8 in.; beam molded 30 ft. 6 in.; depth molded, 16 ft. 6 in.; draft, about 10 ft.

The governor of Pennsylvania has approved a bill passed by the last legislature, making train wrecking a felony, punishable by death in the event that the wreck causes death. He has also approved a bill making it a felony to take brasses or air brake appliances from engines or cars. The railways have asked the governor to veto the full crew bill, and he gave them a hearing this week. Officers of the Pennsylvania say that the full crew bill, if it becomes a law, will compel the expenditure of \$2,000,000 annually on that road unnecessarily; and on the Reading \$700,000 would be the annual expenditure necessary to comply with the law.

The Santa Fe is equipping an exhibit train which will be used to demonstrate to the public the development that has been made in railroading during the past 30 years. The train will include a Mallet locomotive of the heaviest type and a locomotive of the type used 30 years ago; an all-steel passenger coach of the latest model and a wooden passenger coach used in the 80's; an automobile box car of the latest design and an old-fashioned box car, a flat car for exhibiting old and new switches, couplers, brakes and other railway appliances, and an exhibit showing a section of dirt track laid with 52-lb. rail beside a section of rock-ballasted track laid with 90-lb. rail. The train is being equipped at the company's shops in Topeka, Kan., and will make stops in practically every city on the main line.

The very high speed at which train No. 48 of the Michigan Central is scheduled from Windsor, Ont., opposite Detroit, to Bridgeburg, Ont., opposite Buffalo, was noticed in the *Railway Age Gazette* of April 28, page 1004. General Superintendent S. W. Brown informs us that up to May 31 this train has left Detroit and Windsor on time every night and has arrived at Bridgeburg and Buffalo on time every night except in one instance, when it was delayed at St. Thomas 46 minutes by the derailment of a freight train. On that occasion No. 48 arrived in Buffalo 33 minutes late. This train, leaving Detroit, is composed of five cars. At St. Thomas, 112 miles from Detroit, the dining car is set out, and from there to Buffalo the train consists of four cars, though on two occasions it has had an additional sleeping car. The cars in the train are all Pullmans, weighing about 70 tons each. The engines are of the Pacific type, weighing 239,000 lbs. each; cylinders 22 in. x 26 in.; steam pressure 200 lbs. per sq. in.; and diameter of driving wheels 74 in. The distance from Windsor (tunnel station) to Bridgeburg is 227.85 miles, and the rate of speed is 62.14 miles an hour, which includes a stop of five minutes at St. Thomas. Excluding the stop the average rate is 63.6 miles an hour.

F. A. Delano on Some Reasons for Railway Optimism.

In the course of a talk to the Traffic Club of Chicago on May 24, F. A. Delano said:

"The railways have been going through pretty hard conditions in the last four years, and most railway officials are not talking in a very optimistic way. At the same time, there is, to my mind, a good deal to be optimistic about. . . . The most recent occurrence which has taken place, and, perhaps, the most serious disappointment the railways have had, has been the refusal of the commission to grant a general advance in rates. And yet I am inclined to think that this refusal is really a blessing in disguise. I question if it would have helped the railways to have been granted an advance in rates, for a number of reasons. First, because the gross results to be expected from that advance were greatly exaggerated in the public mind, and, second, because if we had been granted all that was asked for, or even half what was asked for, the demands of labor for added wages, and of the public for added service and facilities, would have more than eaten up the entire gain. In the same way, while railway men felt deeply hurt that a Boston lawyer should come out and state that we were not entitled to an advance in rates until we had adopted modern efficiency methods and thereby greatly lowered our cost of operation, it must be admitted that Mr. Brandeis stated an important economic fact, viz., that the proposition that wages of railway employees should be advanced; that, therefore, rates should be advanced, so that the railways might still be able to earn a fair return on their capitalization, proposed a deadly cycle which, in the long run, would certainly prove intolerable.

"And, though efficiency in railway operation is no new thing to intelligent railway managers, there never was a time when managers were studying harder than now how they may increase their efficiency. Let no one imagine it is an easy task. There are a great many difficulties in adopting efficiency methods, and we need public support in that, as in many other things. . . .

And so, I say, without the least hesitation, that a little more public sympathy—a little more consideration from the general public for the difficulties which railways have to contend with, is far more needed than an increase in rates; and yet that there may be no misunderstanding as to my position, I desire to say that I believe that railways should receive increases in some of their rates; in other words, that rate adjustments should be made by leveling up rather than leveling down, as has been done so often in the past. Either that, or the railways must do something to resist the constantly increasing cost of wages and materials, for railways have suffered as much as any single interest by reason of the diminished purchasing power of money.

"One answer to this difficulty is, as suggested by Mr. Brandeis, not lower wages, but increased efficiency by a more thorough study in the matter of intelligent direction of human effort; another is to gradually reduce our import tariff (note that I say 'gradually') in order that we may raise the purchasing power of our money more nearly to the standard of European countries.

"In these matters railway men are not in a class by themselves. They are vitally interested in the common welfare and must realize that in the long run they must stand or fall on the prosperity of the nation as a whole.

"In the matter of price-making on railways, I assume it is evident to everyone that there is to be less flexibility in the future than there has been in the past. Naturally, railway traffic men hesitate to reduce rates because it is out of their power to advance them. State and federal commissions are authorized to reduce rates, but, through a mistaken notion of our law-makers, are not authorized to advance them, although we all know that just as serious discriminations may be brought about by the fact that some rates are too low as by the fact that other rates are too high. Generally speaking, the advocate of government regulation are seeking to discover some mathematical rule or formula by which rates can be made, and unless traffic men can propose sound reasons to the contrary, there is little doubt that we are constantly approaching a time when rates will be made on some mathematical formula like that of the distance tariff.

"There is a great deal to be hopeful for in the improved attitude of railway officials to the public, which I believe will result eventually in a better attitude of the public toward the railways. In the early days, as was inevitable, the investment of private capital in railway enterprises, many of which were more hazardous fifty years ago than the average gold mine is today, led to the contention that railway property, being private property,

was just as much entitled to all the return it could make as any other private property. Railway officials representing the owners of the railways have been compelled to recede from this position. They may claim as much as they will that the public has not fairly listened to both sides of the case; that while many exaggerated statements have been made of the fortunes won in successful railway enterprises and of the occasional profits from 'watered' stock, nothing has been said of the vast fortunes lost and the money sunk in railway enterprises. In no country in the world has private capital been enticed into railway enterprises as it was in the United States, and in no country has so much capital been wiped out. I think I can safely offer to prove that for every dollar of watered stock earning a dividend I will show two dollars of capital entirely wiped out and earning nothing. But what is the use? The public have made up their minds and the courts have laid down the doctrine. 'Railway property is private property,' the courts say, 'but it is affected with a public use,' and this doctrine is a doctrine which will undoubtedly be extended as time goes on, to many other forms of capital. There is no doubt in my mind that the 'trust' problem can only be ultimately settled by applying the doctrine which has already been applied to the railways; in other words, that while the butcher, the baker or the candlestick maker may fix prices at will so long as their business is subject to the ordinary laws of competition, yet just as soon as by reason of monopoly or combination the laws of trade no longer apply, then their business will have to become subject to public supervision and, if necessary, control. Hence the railway man ought to feel somewhat jubilant that he has gone through the mill and, in the language of the noble art of self-defense, 'although somewhat disfigured, is still in the ring.' Other public service corporations are in the same boat and the turn of the banker, the manufacturer and the merchant is coming next. Indeed, why shouldn't the newspapers have a taste of it?

"Another hopeful aspect of the situation lies in the fact that if it is true that the railways are public service corporations, or, as stated in the language of the courts, 'quasi-public institutions,' it follows that railway officials are quasi-public officials and, so long as they conduct themselves properly as quasi-public servants, are entitled to the consideration of the public, as well as public abuse and condemnation where they fail in their duties.

"Then, again, while railway management is under peculiarly strict supervision, that supervision has its good side. As every railway official knows, inspectors from the Interstate Commerce Commission have the right to come into your office any hour of any day, and without previous notice or warning, ask for papers, go through your files and documents, memoranda, etc., and see how you are transacting your business, and send evidence of your methods to be looked over by the authorities at Washington. At first one resents the idea, but on maturer consideration I firmly believe that this is a good thing. It will make men more careful in their public conduct and they will realize that a quasi-public servant must so conduct his business that anyone properly authorized may come in and see what he has done and how he has done it. Furthermore, such supervision is going to help the man who wants to conduct his business fairly—and will relieve him to some extent, at least, of the difficulties incident to unfair competition and shady business methods."

Expediting Traffic on Single Track.

That automatic block signals are of assistance in expediting traffic on single as well as double track is a fact too well known now to need demonstration. Yet one of the ways in which they do so has as yet escaped the attention of many engineers and operating men. This method was discovered by the trainmen of a western road, where three-position signals are used. By observing the performance of the signals from the rear of the trains it was not long before they found out that the signals governing in the opposite direction to that in which their train was running indicated with considerable accuracy the position of a following train. From the discovery of this fact to its practical application to their work was but a step. When an eastbound inferior train is to be passed by a following train, the conductor observes the westbound signals from the rear end of his train on entering a station (the train running in on the main track). If the outgoing westbound signal clears to the vertical position when the rear end of this train passes it, the conductor knows that the following train is at least two block

sections back, and so he proceeds to the next station; where the observation is repeated. If, however, the signal remains at stop or clears only to the diagonal position, he sees that he has no time to spare and he pulls through the station and backs into the passing track. It is said that since this method of procedure has been in vogue the improvement in running time of trains has been remarkable. Where the block sections are long enough to provide a sufficient time interval, and where the arrangements are such that the time table rules regulating the conduct of fast trains as related to slow trains can be safely suspended, the advantage is obvious. There is also a great saving in delays, due to breaking in two, as a break, if it occurs, will happen on the passing track, when pulling out, and not on the main line when preparing to pull in.

Collision on the Burlington.

In the butting collision near Indianola, Neb., on the Chicago, Burlington & Quincy, May 29, four enginemen, one express messenger and five passengers were killed, two passengers were so badly injured that they have since died and about 20 other persons were injured. The collision was between westbound passenger train number nine and eastbound passenger train number twelve. The collision is said to have been due to a misunderstanding of the train dispatcher's orders.

An Accommodating Car.

The Altoona, Juniata & Northern, operating the Wopsononock Railway, opened the summer passenger season May 30, when 100 people appeared at the station to be hauled up the mountain, though no advertising had been done. This road runs from Altoona to the high mountain back of the city. It has been run through the winter as a coal carrier, but without passenger service. An open passenger car that had been converted into a closed work car was re-converted into an open passenger car to accommodate the passengers on Memorial Day. It is quite possible that the road will build or buy one or two more passenger cars.

Rear End Collision on the New Haven.

Two enginemen, two firemen and a brakeman were killed in a rear end collision on the New York, New Haven & Hartford, which occurred near Fairfield, Conn., shortly before midnight on June 6. The statement issued by the New Haven office is as follows:

Extra 338, running east on track No. 2—the inside eastbound track—stopped to fix a hot box. Engineman of freight train from Harlem River to Holyoke and Midway, known as H. Y. 2, also running east on the inside eastbound track, failed to observe the Fairfield signal, which was against him, and ran into the rear of freight train, blocking the two westbound tracks. The two westbound freights, running one on each westbound track, ran into the wreckage. Based on the present information at hand, the man responsible for starting the wreck was killed. In addition, the fireman and brakemen on this train were also killed, and the engineman on one of the westbound freights that ran into the wreckage was killed.

M. M. and M. C. B. Conventions.

O. F. Ostby, chairman of the enrollment committee of the Railway Supply Manufacturers' Association, has issued a notice to the effect that those who attend the M. M. and M. C. B. conventions at Atlantic City next week, will be able to register at any time after noon Tuesday, June 13; and that the registration booth will be kept open until 10 o'clock that night. He urges that all who can, register that day so as to avoid possible congestion the opening day of the convention.

A special train, the M. M. Special, will leave Chicago over the Pennsylvania Lines at 3 p. m. Monday, June 12, and will arrive at Atlantic City before noon the following day, without change. This train will be composed of all steel equipment, made up of sleeping, dining, library, observation and smoking cars. The fare for the round trip from Chicago will be \$29.50. Stop-over privileges will be allowed at Philadelphia, Washington and Baltimore; it will be necessary, however, to make it known

at the time of purchasing tickets if stop-over is desired at the points named.

The Central of New Jersey will run a special train from New York to Atlantic City on Tuesday, June 13, leaving Twenty-third street at 3:30 p. m. For the return trip this train will leave Atlantic City at 3 p. m. on Wednesday, June 21, arriving in New York at 6 p. m.

The sessions of the conventions will be held in the Greek Temple on the Million Dollar Pier. The program is as follows:

M. M. ASSOCIATION.

Wednesday, June 14.

Opening exercises.

Discussion of reports of:

Advisory Technical Committee.

Mechanical Stokers.

Revision of Standards.

Smoke Preventing Devices for Firing Up Locomotives at Terminals.

Best Construction of Locomotive Frames.

Thursday, June 15.

Discussion of reports on:

Main and Side Rods.

Piston Rods and Crossheads.

Repair Equipment for Roundhouses.

Water Treatment.

Lubrication of Locomotive Cylinders.

Consolidation.

Individual paper on Locomotive Performance Under Different Degrees of Superheated Steam, by Professor C. H. Benjamin.

Discussion of report on Safety Valves.

Friday, June 16.

Discussion of reports on:

Safety Appliances.

Design, Construction and Inspection of Locomotive Boilers.

Contour of Tires.

Steel Tires.

Flange Lubrication.

Minimum Requirements for Headlights.

Resolutions, Correspondence, etc.

Election of officers.

M. C. B. ASSOCIATION.

Monday, June 19.

Opening exercises.

Discussion of reports on:

Revision of Standards and Recommended Practice.

Train Brake and Signal Equipment.

Brake Shoe Equipment.

Tuesday, June 20.

Discussion of reports on:

Rules for Loading Materials.

Rules of Interchange.

Prices for Labor and Material for Steel Cars.

Coupler and Draft Equipment.

Car Wheels.

Safety Appliances.

Revision of Code of Tests.

Freight Car Trucks.

Refrigerator Cars.

Wednesday, June 21.

Discussion of reports on:

Consolidation.

Springs for Freight Car Trucks.

Lumber Specifications.

Train Lighting and Equipment.

Train Pipe and Connection for Steam Heat.

Resolutions, correspondence, etc.

Election of officers.

American Institute of Electrical Engineers.

The twenty-eighth annual convention of the American Institute of Electrical Engineers will be held at the Hotel Sherman, Chicago, June 26-30. On Tuesday, June 27, at 10 a. m., the

Power Station session will be held. The Electric Lighting session will be held at 8.30 p. m. on the same day. On Wednesday, June 28, at 10 a. m. the Railway session will be held. At this session a paper will be read on Some Data from the Operation of the Electrified Portion of the West Jersey & Seashore Railroad, by B. F. Wood. W. S. Murray will read a paper on The Analysis of Electrification; and E. F. W. Alexanderson will read a paper on Induction Machines for Heavy Single-Phase Motor Service. The Industrial Power session will be held at 2.30 p. m. on the same day. There will also be a parallel meeting at 2.30 p. m. of the Telegraphy and Telephony sessions. On Thursday, June 29, at 10 a. m. the High Tension Transmission session will be held; and on Friday, June 30, a general session will be held at 10 a. m. At a simultaneous meeting the High Tension Transmission session will be continued. The Educational session will be held at 2.30 p. m. on the same day. All of the papers may be found in the April, May, June and July issues of the *Proceedings*. The Entertainment Committee has prepared an attractive program, including a dance at 9 p. m. June 26; luncheons and excursions. Ralph W. Pope, New York, is secretary.

American Society for Testing Materials.

The fourteenth annual meeting of the American Society for Testing Materials will be held at the Hotel Traymore, Atlantic City, N. J., June 27-July 1. The annual address by the president, Henry M. Howe, has for its subject the American Society for Testing Materials. The program includes 58 papers. The following are of especial interest to railway men: Measured Strains on Engineering Structures, by James E. Howard; Flue Sheet Cinders, Cause of Formation in Locomotives, by Robert Job; Studies on Steel Tires, by Robert Job and Milton J. Hersey; Ductility in Rail Steel, by P. H. Dudley. There are six papers on corrosion of iron and steel and preservative coatings; seven papers on cement and concrete; seven papers on various subjects relating to steel, including one on Recent Developments in Testing of Boiler Tubes, by F. M. Spelter; five papers on bitumen; five papers on testing apparatus and methods; and a paper on the Brinell Ball Test Applied to Wood, by W. K. Hatt.

Air Brake Association Officers.

At the annual convention of the Air Brake Association held in Chicago, May 23-26, the following officers were elected: President, W. P. Huntley (C. & O.); first vice-president, T. A. Wahlert (T. & P.); second vice-president, W. J. Hatch (C. P.); third vice-president, L. H. Albers (N. Y. C.); secretary, F. M. Nellis (Westinghouse Air Brake Company); treasurer, Otto Best (N. C. & St. L.). Executive committee: J. F. Slattery (D. & R. G.); T. W. Dow (Erie); and C. H. Weaver (L. S. & M. S.).

American Society of Civil Engineers.

At the meeting of the American Society of Civil Engineers, held on Wednesday, June 7, in New York, the following papers were presented: Two Earth Dams of the United States Reclamation Service, by D. C. Henny, M. Am. Soc. C. E.; and Steel Centering Used in the Construction of the Rocky River Bridge, Cleveland, Ohio, by Wilbur J. Watson, M. Am. Soc. C. E. These papers were printed in *Proceedings* for April, 1911.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass.
AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Scranton, Pa.; next meeting, June 22, 1911, Niagara Falls, N. Y.
AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—C. M. Burt, Boston, Mass.; next meeting, St. Paul, Minn., Sept. 19, 1911.
AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, East St. Louis, Ill.; June 20-23, Kansas City, Mo.
AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—O. G. Fetter, Carew building, Cincinnati, Ohio; 3d Friday of March and September.
AMERICAN ELECTRIC RAILWAY ASSOCIATION.—H. C. Donecker, 29 W. 39th St., New York; October 9-13, Atlantic City, N. J.
AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 24 Park Place, New York.
AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago; Oct. 17-19, 1911, St. Louis, Mo.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, Monadnock Block, Chicago.
AMERICAN RAILWAY INDUSTRIAL ASSOCIATION.—G. L. Stewart, St. L. S. W. Ry., St. Louis, Mo.
AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago; June 14-16, 1911, Atlantic City, N. J.
AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—O. T. Harroun, Bloomington, Ill.; annual convention, July 11-13, Chicago.
AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.; June 27-July 1, Atlantic City, N. J.
AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., New York; 1st and 3d Wed., except June and August, New York.
AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—D. J. Haner, 13 Park Row, New York; 3d Tuesday of each month, New York.
AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.
ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—C. G. Phillips, 143 Dearborn St., Chicago.
ASSOCIATION OF RAILWAY CLAIM AGENTS.—J. R. McSherry, C. & E. I., Chicago.
ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago; semi-annual, June 16-17, Washington, D. C.
ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, 135 Adams St., Chicago; June 19, 1911, Boston, Mass.
ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 24 Park Pl., New York; June 20-21, Cape May City, N. J.
CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 1st Tuesday in month, except June, July and Aug., Montreal.
CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 413 Dorchester St., Montreal, Que.; Thursdays, Montreal.
CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month, Chicago.
CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Thurs. in Jan. and 2d Fri. in March, May, Sept., Nov., Buffalo, N. Y.
CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—D. F. Jurgensen, 116 Winter St., St. Paul, Minn.; 2d Monday, except June, July and Aug., St. Paul.
ENGINEERS' SOCIETY OF PENNSYLVANIA.—E. R. Dasher, Box 704, Harrisburg, Pa.; 1st Monday after 2d Saturday, Harrisburg, Pa.
ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—E. K. Hiles, 803 Fulton building, Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.
FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Richmond, Va.; June 21, St. Paul, Minn.
GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—E. S. Koller, 226 W. Adams St., Chicago; Wed. preceding 3d Thurs., Chicago.
INTERNATIONAL MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.
INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, rue de Louvain, 11 Brussels; 1915, Berlin.
INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago.
INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—L. H. Bryan, D. & I. R. Ry., Two Harbors, Minn.; July 25-27, Chicago.
INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, Lima, Ohio; annual, Aug. 15, Toledo, Ohio.
IOWA RAILWAY CLUB.—W. B. Harrison, Union Station, Des Moines, Ia.; 2d Friday in month, except July and August, Des Moines.
MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago; June 19-21, 1911, Atlantic City, N. J.
MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION, OF UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass.; Sept. 12-15, 1911, Atlantic City, N. J.
NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.
NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.
NORTHERN RAILWAY CLUB.—C. L. Kennedy, C. & M. & St. P., Duluth, Minn.; 4th Saturday, Duluth.
OMAHA RAILWAY CLUB.—H. H. Maulick, Barker Block, Omaha, Neb.; second Wednesday.
RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.
RAILWAY CLUB OF PITTSBURGH.—C. W. Alleman, P. & L. E., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.
RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Bethlehem, Pa.; June 13, New York; annual, Oct. 10, Colorado Springs, Colo.
RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, Box C, Collinwood, Ohio.
RICHMOND RAILROAD CLUB.—F. O. Robinson, Richmond, Va.; 2d Monday, except June, July and August.
ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Walter E. Emery, P. & P. U. Ry., Peoria, Ill.; September 12-15, St. Louis, Mo.
ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.
SOCIETY OF RAILWAY FINANCIAL OFFICERS.—C. Nyquist, La Salle St. Station, Chicago; Sept. 12-14, St. Paul, Minn.
SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Montgomery, Ala.
SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., Atlanta.
TOLEDO TRANSPORTATION CLUB.—J. G. Macomber, Woolson Spice Co., Toledo, Ohio; 1st Saturday, Toledo.
TRAFFIC CLUB OF CHICAGO.—Guy S. McCabe, La Salle Hotel, Chicago; meetings monthly, Chicago.
TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August, New York.
TRAFFIC CLUB OF PITTSBURGH.—T. J. Walters, Oliver building, Pittsburgh, Pa.; meetings monthly, Pittsburgh.
TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7042 Stewart Ave., Chicago; annual, June 20, 1911, Baltimore, Md.
TRANSPORTATION CLUB OF BUFFALO.—J. M. Sells, Buffalo; first Saturday after first Wednesday.
TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, L. S. & M. S., Detroit, Mich.; meetings monthly.
TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.; annual, August 29-September 1, Chicago.
WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.
WESTERN RAILWAY CLUB.—J. W. Taylor, Old Colony building, Chicago; 3d Tuesday of each month, except June, July and August.
WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago; 1st Wednesday in month except July and August, Chicago.
WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, First National Bank bldg., Chicago.

Traffic News.

An officer of the Long Island Railroad says that during the past year the conductors of that company have taken up on the trains 140 commutation tickets presented by persons who had no right to use them.

It is announced that the Denver & Rio Grande and the Western Pacific will soon put on a new limited train between Denver and San Francisco, which will run in about one hour less than the fastest schedule now in effect, and will have through sleepers received at Denver from the Rock Island and the Burlington.

According to a press despatch from Waycross, several hundred citizens, gathered from fourteen counties of southern Georgia, have organized a Good Roads Association, with a president and eight vice-presidents. Furthermore, the association plans to run a good roads train, following the example of the agricultural college. So the railway example has had an effect.

Notice has been given in New England that the allowance of 72 hours free time before the collection of demurrage on cars containing coal, grain and lumber, which was tentatively authorized by the Interstate Commerce Commission, and which was to have been discontinued June 1, will be continued until September 1. But on cotton, the free time has now been reduced from 96 hours to 48 hours.

The proposed establishment of a low-rate freight route from New York to the West, via Albany and Binghamton, over the Delaware & Hudson, was the subject of a hearing by deputies of the Interstate Commerce Commission at New York last week, and at the close of the hearing it was announced that the roads interested had agreed to withdraw the low-rate tariffs. It was found that other roads intended to make reductions, to meet those of the proposed route, and the Delaware & Hudson asked leave to withdraw the new tariffs.

Total March Earnings and Expenses.

Logan G. McPherson, director of the Bureau of Railway Economics, in Bulletin Number 13, giving a summary of revenues and expenses of steam roads in the United States for March, 1911, says:

"For the month of March, 1911, total operating revenues decreased from the same month of 1910 nearly \$11,000,000, which was equivalent to \$64 per mile or 6.2 per cent. This decrease was chiefly in freight revenue. Operating expenses also declined as

compared with a year ago, the decrease amounting to 3.0 per cent. This is the result of reductions amounting to 13.8 per cent. in maintenance of way and 4.7 per cent. in maintenance of equipment, combined with increases in other accounts, transportation expenses increasing six-tenths of one per cent. and general expenses 8.1 per cent. The operating ratio was 69.4 per cent. as compared with 74.7 per cent. in February, 1911, and 67.1 per cent. in March, 1910.

"Net operating revenue showed a decrease of \$43 per mile or 12.8 per cent. This decrease was due to a decline in revenues without a correspondingly large decrease in expenses. Net revenue per mile per day was \$9.55 as compared with \$7.68 in February. There was an increase in taxes of 2.6 per cent., and operating income, which is net revenue with outside operations included and taxes deducted, showed a decline of \$44 per mile or 14.7 per cent.

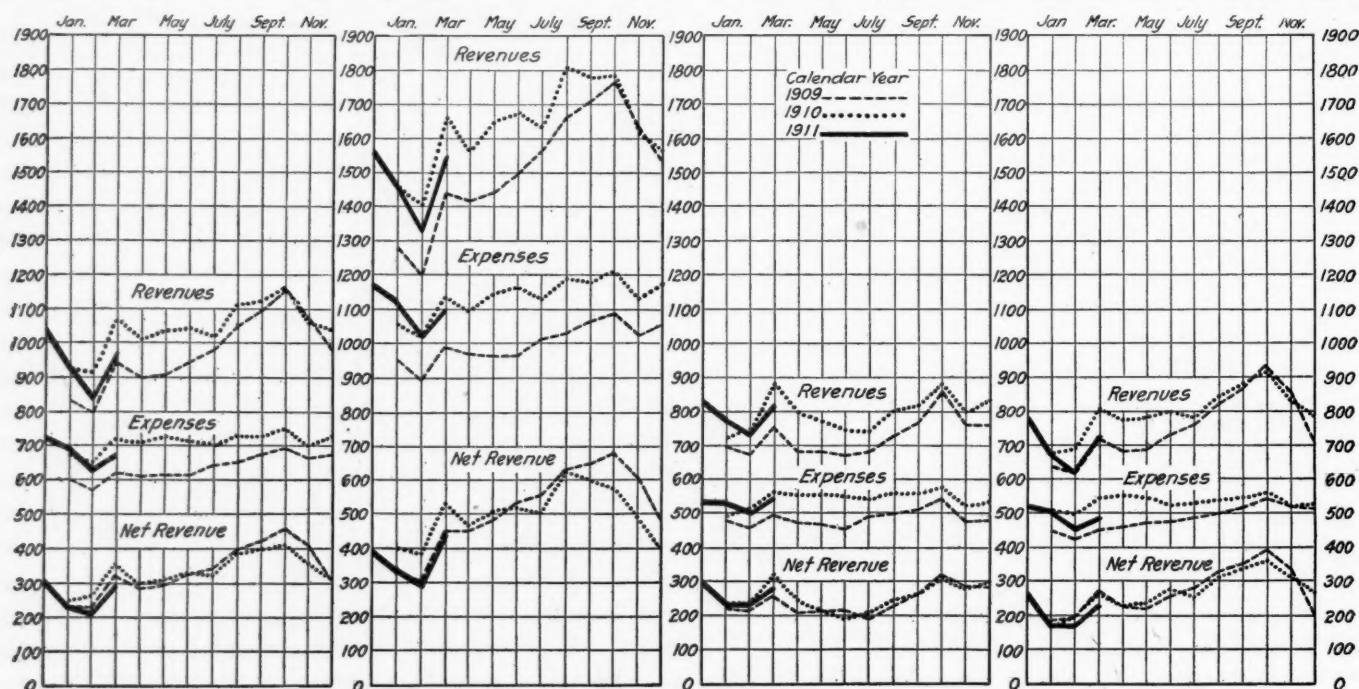
"Increase in total operating revenues was confined to the southern group of roads, where it was only three-tenths of one per cent. But in the South there was a decline in freight revenues as in every other geographical group. In the South alone was there any increase in passenger revenues.

"In operating expenses the South showed a total increase of 4.3 per cent., but in maintenance of equipment and traffic expenses there were decreases of 1 per cent. and 1.5 per cent., respectively, transportation expenses increasing 9 per cent. In the East, there was a decline of 1.2 per cent. in total operating expenses, there being decided decreases in both maintenance accounts. In the West, there was again a decrease in transportation expenses heavier than that noted last month, and at the same time maintenance of way expenditures on Western roads were one-fifth less than in March of last year.

"The operating ratio increased in all three groups, the greatest increase being in the Eastern group, where it rose from 68.3 per cent. in March, 1910, to 71.5 per cent. in March, 1911. The South showed nearly the same increase, that is, from 63.5 per cent. to 66.1 per cent. In no group was there any increase in net revenue. The East shows a decline of 15.4 per cent., the South of 6.8 per cent., and the West of 11.4 per cent. Operating income shows corresponding results, a decrease of 18.3 per cent. in the East, of 8.5 per cent. in the South, and of 12.4 per cent. in the West.

"For the nine months of the fiscal year 1911, there is a slight increase of operating revenues for all roads of nine-tenths of one per cent. over the corresponding period of 1910. However, expenses increased 5.5 per cent., with the result that net revenue shows a decrease of 7.9 per cent. This decrease runs as high as 13.2 per cent. in the Eastern group, and was 4.0 per cent. in the West, with practically no change in the South. In operating income there was a decline in every section.

"The calendar year to date makes an unfavorable showing as



Comparative Chart of Earnings and Expenses in 1909, 1910 and 1911.

compared with last year, because in addition to slightly increasing expenses, there is the fact of declining revenues. Operating revenues for these three months for all roads declined 3.2 per cent., all the decrease being in freight revenue. Expenses increased three-tenths of one per cent., with the result that net revenue shows a decrease of 11.3 per cent. and operating income of 13.6 per cent. As has been the case during the nine months of the fiscal year, the heaviest decline in operating income is found in the Eastern group, but a decrease appears in every group."

The accompanying chart shows the variations in revenues and expenses in the separate months, the accompanying tables gives important averages:

	Fiscal year ended		
	March 1911.	March 1910.	June 30, 1910.
Per cent. of total operating revenues:			
Maintenance of way and structures.....	11.4	12.4	13.4
Maintenance of equipment.....	15.9	15.6	15.0
Traffic expenses.....	2.1	2.0	2.0
Transportation expenses.....	37.3	34.7	33.4
General expenses.....	2.7	2.4	2.5
Total operating expenses.....	69.4	67.1	66.3

Car Surpluses and Shortages.

Arthur Hale, chairman of the committee on relations between railways of the American Railway Association in presenting statistical bulletin No. 95-A, giving a summary of car shortages

and surpluses by groups from January 1, 1910, to May 24, 1911, says:

"A large decrease in the coal car surplus, with lesser decreases in box and miscellaneous cars, brings the total surplus down to 168,233, a total decrease of 20,614 cars. The box car decrease is 4,013 coal and gondolas, 16,108, and miscellaneous cars 5,936, with an increase of 5,443 in flat cars. The change in miscellaneous cars is principally in coke cars in group 2 (Eastern), and stock cars in groups 6 (Northwestern), and 10 (Pacific). The decrease in coal cars is chiefly in groups 2 (Eastern), and 4 (Middle Atlantic), while the improvement in the box car situation is most marked in groups 4 (Middle Atlantic), and 5 (Southern), with some decrease in this class reported for group 8 (Middle Western)."

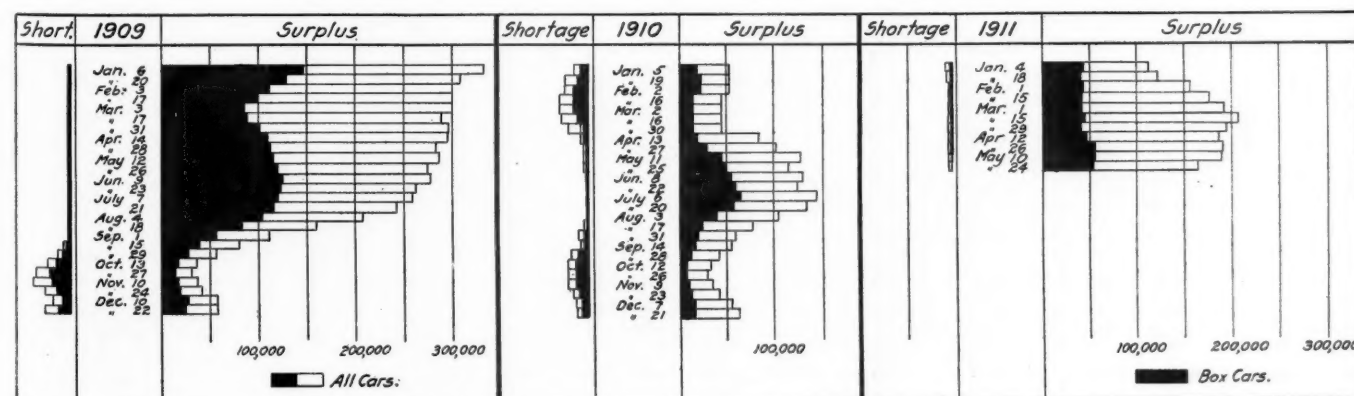
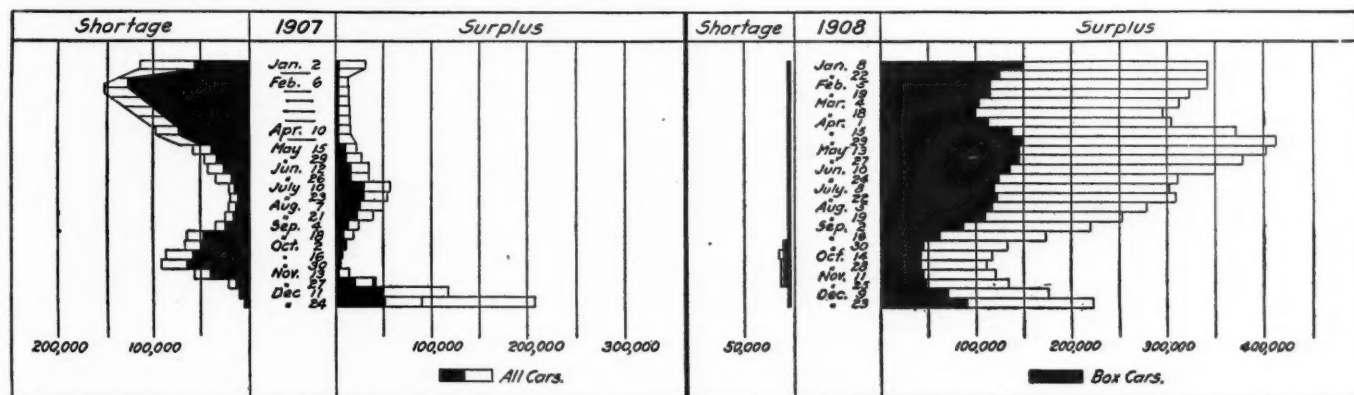
The accompanying table gives surpluses and shortages by groups for the last period covered by the report and the charts show balance and performance bi-weekly from 1907 to 1911 inclusive.

Traffic Agreement Between Frisco and Santa Fe.

The St. Louis & San Francisco and the Atchison, Topeka & Santa Fe have made an arrangement, effective at once for freight service, and effective on November 1 for passenger service, under which through trains will be run from St. Louis to San Francisco. The road of the Frisco will be used between

CAR SURPLUSES AND SHORTAGES.													
		No. of roads.	Surpluses				Shortages						
Date.			Coal, gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.			
Group	*1.—May	24, 1911.....	8	551	534	245	274	1,604	50	123	164	0	319
"	2.—"	24, 1911.....	25	2,408	2,895	10,984	6,809	23,096	0	0	0	14	14
"	3.—"	24, 1911.....	26	8,886	1,599	39,433	4,793	54,711	0	0	0	44	44
"	4.—"	24, 1911.....	10	2,154	2,569	1,863	1,428	8,014	0	110	0	0	110
"	5.—"	24, 1911.....	19	3,603	858	5,211	1,629	11,301	12	0	0	1	13
"	6.—"	24, 1911.....	26	11,637	908	3,470	5,187	21,202	0	0	0	5	5
"	7.—"	24, 1911.....	4	2,051	133	1,142	649	3,975	0	0	0	0	0
"	8.—"	24, 1911.....	16	6,019	284	4,658	4,190	13,151	0	0	0	13	13
"	9.—"	24, 1911.....	11	2,285	523	357	980	4,145	0	0	2	1	3
"	10.—"	24, 1911.....	21	9,157	2,454	2,665	9,310	23,586	0	2	0	4	6
"	11.—"	24, 1911.....	6	2,449	149	15	835	3,448	191	110	0	7	308
Total			172	51,200	12,906	68,043	36,084	168,233	253	345	148	89	835

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland, and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia, and Florida lines; Group 6—Iowa, Illinois, Wisconsin, Minnesota and the Dakotas lines; Group 7—Montana, Wyoming and Nebraska lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Oregon, Idaho, California and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortages, 1907 to 1911 Inclusive.

St. Louis and Avar, Okla., and the Santa Fe west of there. The equipment will be provided and operated jointly by the two companies. The following are given as the mileages between St. Louis and the Pacific coast over the various routes, including the new one:

Route.	St. Louis- Los Angeles. Miles.	St. Louis-San Francisco. Miles.
Frisco-Santa Fe.....	2,034	2,315
Rock Island-Southern Pacific.....	2,058	2,542
Wabash-Santa Fe	2,084	2,395
Wabash-Union and Southern Pacific....	2,717	2,287
Missouri Pacific-Denver & Rio Grande- Western Pacific .....	.....	2,467

The Frisco will arrange connections via Springfield from Memphis and Birmingham, and will likewise arrange for service out of New Orleans by its New Orleans & Mexico line, connection being made with the Santa Fe at Houston.

Cotton Crop Conditions.

The crop reporting board of the department of agriculture estimates that the area planted to cotton this year (1911) in the United States, including that already planted and expected to be planted, is about 104.7 per cent. of the area planted to cotton last year, equivalent to about 35,004,000 acres, as compared with 33,418,000 acres indicated by the bureau's revised estimate of last year's planted area, an increase of about 1,586,000 acres, or 4.7 per cent.

The condition of the growing crop on May 25 was 87.8 per cent. of a normal condition, as compared with 82.0 per cent. at the corresponding date in 1910, and 80.9 per cent., the average condition for the past ten years on May 25.

Details by states follow:

States.	Revised Figures Indicating Thousand Acres Planted in 1910.	Area Planted in 1911; Preliminary Estimate.		Condition May 25,		
		Per Cent. Compared with 1910.	Thousand Acres.	1911.	1910.	Ten- year Aver- age.
Virginia	34	109	37	93	90	85
North Carolina....	1,511	105	1,587	83	84	83
South Carolina....	2,626	103	2,705	80	78	81
Georgia	4,970	103	5,119	92	81	82
Florida	268	106	284	95	80	86
Alabama	3,633	105	3,815	91	83	80
Mississippi	3,420	101	3,454	86	82	80
Louisiana	1,075	104	1,118	91	76	79
Texas	10,350	105	10,868	88	83	80
Arkansas	2,375	103	2,446	87	81	81
Tennessee	783	105	822	83	86	83
Missouri	103	112	115	86	87	85
Oklahoma	2,260	116	2,622	87	84	84
California	10	123	12	95	90	..
United States....	33,418	104.7	35,004	87.8	82.0	80.9

INTERSTATE COMMERCE COMMISSION.

The commission has suspended the rates on oil cake and oil meat of northwestern railways until October 7, when the commission will give a hearing as to proper rates.

The commission has dismissed the case involving suspension of increased rates on fruits and vegetables from Chicago, over the Chicago, Milwaukee & St. Paul, and the Chicago & Northwestern, which were filed some time ago and were suspended until June 1. The commission takes no action concerning these rates and allows them to go into effect.

Refusal to Suspend a Rate Cut.

In re request for suspension of reduced rates on packing-house products and fresh meats from Fort Worth, Tex., to Mississippi River crossings and points east thereof. Opinion by the commission:

In this matter the committee is called upon to postpone the effectiveness of certain reductions in rates. The ground of the request is that the reductions are discriminatory as against the complainants.

We understand the Texas & Pacific Railway initiated the reductions, and certain other lines met its action. They are to become effective on June 18, 1911. They consist of reduced proportional rates on packing-house products and fresh meats from Fort Worth, Tex., to St. Louis, Mo., the reduction on fresh meats being from a rate of 38½ cents to a rate of 35½ cents, and the reduction on packing-house products being from a rate of 33 cents

to a rate of 32¾ cents. As fresh meats and packing-house products from Fort Worth move largely to points beyond St. Louis, and as such proportional rates are used in combination to make up through rates to such points beyond, the effect is to reduce the existing rates from Fort Worth to northern and eastern points generally by the amount of 3 cents per 100 lbs. on fresh meats and one-fourth of a cent on packing-house products.

The packing houses at Fort Worth are operated by the Armour and Swift interests. The requests for suspension comes from packing houses recently established at Oklahoma City, Okla., by Nelson Morris & Company and Schwarzschild & Sulzberger. A case is presented in which there is active competition between carriers operating to make a substantial reduction in rates. The commission is asked to suspend such reduction because it will be to the relative disadvantage of Oklahoma City. The latter point is situated on the lines of carriers which serve both cities and which, therefore, are not inclined to extend the reduction of rates beyond the point of actual competition. These carriers (Atchison, Topeka & Santa Fe Railway; Chicago, Rock Island & Pacific Railway; and Missouri, Kansas & Texas Railway) have met the cut in rates made by the Texas & Pacific interests at Fort Worth, but are not inclined to extend this cut to Oklahoma City. It is to be added that the carriers beyond St. Louis are indifferent as between the two cities, earning the same compensation on shipments from either.

No question under the fourth section is present, inasmuch as the rates from Oklahoma City to the territory covered by the proposed reductions are still 4 cents less on dressed beef and packing-house products than the corresponding rates from Fort Worth.

It is urged by the carriers making the reduction and by the Railroad Commission of Texas and the Fort Worth interests that the commission has no power to suspend reductions in rates; and that no proper occasion for the exercise of such power has been shown on this application.

Upon these contentions the commission now decides that it has the power to suspend reductions of rates in any case where such suspension will operate to prevent an apparent discrimination. In our view, however, a prima facie case clearly and affirmatively persuasive should be presented before the power to suspend is exercised. We can not say that this has been done upon the present application. Inasmuch as each rate and each adjustment of rates urged upon this hearing will, possibly, become the subject of formal proceedings, it is deemed inadvisable to engage at the present time in a more exhaustive discussion thereof. The application for suspension of the reduction of rates is denied. (21 I. C. C. 68.)

STATE COMMISSIONS.

The Railroad Commission of Louisiana has adopted a rule providing that in constructing freight tariffs and classifications and passenger fare schedules, applying between points in the state of Louisiana, the rules and regulations adopted by the Interstate Commerce Commission shall be observed by railways and express companies.

The New York State Senate has confirmed Governor Dix's nomination of J. Sergeant Cram as a member of the New York Public Service Commission (New York city district), succeeding Edward M. Bassett. Mr. Cram has held various city offices under Democratic administrations and has acted as personal attorney for Charles F. Murphy.

The New York State Public Service Commission, second district, has ordered the Delaware & Hudson to restore train No. 6, which formerly stopped at Fort Ann about 5 p. m.; this to accommodate the people of Fort Ann; and the company is ordered not to discontinue it again until the commission finds that the travel does not justify the service and so declares. In connection with this order the commission allows the road to discontinue stopping train No. 2 at Fort Ann on flag signal. And then it introduces a new wrinkle, in the shape of a requirement that train No. 7, northbound, shall stop at Fort Ann to leave passengers, provided there are four of them who wish to be left. To a woman with two children this rule would be annoying; however, she might borrow a neighbor's child. One 4 years and 364 days of age would cost no fare and she would "get even" with the road.

REVENUES AND EXPENSES OF RAILWAYS AS REPORTED TO THE INTERSTATE COMMERCE COMMISSION.

MONTH OF APRIL, 1911.

Name of road.	Operating revenues				Operating expenses				Net operating revenue		Outside operations, net.	Taxes.	Operating income (or loss).	Increase (or dec.) last year.
	Mileage operated at end of period.	Freight.	Passenger.	Total, inc. misc.	Way and structures.	Maintenance of equipment.	Traffic.	Trans- portation.	General.	Total.				
Atchison, Topeka & Santa Fe	7,550 ¹	\$4,959,248	\$1,839,331	\$6,798,579	\$78,001	\$1,291,426	\$162,294	\$2,216,506	\$164,580	\$4,812,907	.....	\$258,967	\$2,476,930	\$225,003
Atlantic Coast Line	4,495 ²	1,923,512	682,677	2,606,189	317,203	885,441	42,639	956,338	78,239	1,782,241	.....	115,000	938,200	150,003
Boston & Maine	2,243	2,070,558	1,155,171	3,225,729	392,014	535,949	41,185	636,216	98,931	2,704,295	.....	83,427	635,427	274,921
Central of New Jersey	6,313	1,657,088	386,105	2,043,193	199,886	299,584	29,190	585,794	80,000	1,157,798	.....	48,487	928,351	527
Chesapeake & Ohio	1,948	1,889,799	398,627	2,288,426	323,347	476,397	46,951	715,438	162,648	1,621,968	.....	32,353	792,633	260,680
Chesapeake & Ohio of Indiana	285	99,712	15,271	114,983	30,350	30,350	4,367	65,158	5,020	135,229	.....	3,790	17,324	.....
Chicago & North Western	7,744 ⁴	3,605,601	1,338,526	4,944,127	760,342	765,888	97,092	2,429,629	137,871	4,190,872	.....	1,090	1,081,583	244,567
Chicago & Alton	1,025 ⁵	670,228	301,839	972,067	81,321	106,697	50,550	181,866	33,265	683,699	.....	37,000	336,390	98,486
Chicago, Burlington & Quincy	9,091 ⁶	4,209,436	1,590,597	5,800,033	1,223,990	1,047,032	130,818	2,145,550	187,279	4,734,669	.....	14,375	1,425,410	127,446
Chicago, Milwaukee & Puget Sound	1,980 ⁷	953,962	147,922	1,101,884	102,543	114,122	26,380	471,426	16,636	731,107	.....	50,307	346,718	274,234
Chicago, Milwaukee & St. Paul	7,511	3,292,631	996,750	4,289,381	541,190	637,493	100,708	2,110,681	108,952	3,499,024	.....	226,616	1,058,697	306,718
Chicago, Rock Island & Pacific	7,548 ⁸	3,067,779	1,418,430	4,486,209	760,212	766,706	155,324	1,886,206	137,299	3,806,224	.....	206,732	787,278	368,133
Chicago, St. Paul, Minneapolis & Omaha	1,744	9,015,244	3,782,750	12,797,994	1,459,616	1,577,738	236,748	3,283,379	301,669	8,859,147	.....	1,795	628,287	265,415
Cleveland, Cincinnati, Chic. & St. Louis	1,979	1,590,485	578,421	2,168,906	329,186	429,151	82,171	1,047,300	56,572	1,603,872	.....	80,000	396,543	2,862
Delaware, Lackawanna & Western	930	2,128,205	613,409	2,741,614	328,099	467,135	69,082	859,790	64,556	1,788,462	.....	138,023	1,029,164	371,598
Denver & Rio Grande	2,556 ⁹	1,317,230	386,385	1,703,615	186,265	325,290	49,054	629,624	48,445	1,238,678	.....	543,591	468,340	135,955
Erie	1,994 ¹⁰	2,803,125	682,178	3,485,303	162,138	659,987	88,291	1,323,391	85,439	2,323,245	.....	120,631	1,171,357	28,819
Great Northern	7,329 ¹¹	3,142,963	1,053,106	4,196,069	1,037,899	641,012	75,217	2,125,850	89,079	3,269,094	.....	15,862	1,074,499	140,614
Gulf, Colorado & Santa Fe	1,537 ¹²	514,403	214,715	729,118	172,345	147,069	18,575	384,403	30,553	752,938	.....	25,715	30,729	145,793
Lake Shore & Michigan Southern	1,663	2,476,758	909,935	3,386,693	627,098	580,331	103,064	1,348,680	85,668	2,744,841	.....	1,019,730	877,645	115,362
Lehigh Valley	1,431	2,728,927	360,465	3,089,392	245,824	447,191	78,130	969,530	64,874	1,805,549	.....	15,476	1,265,086	115,362
Louisville & Nashville	4,591	2,947,179	896,842	3,844,021	763,340	791,229	85,226	1,452,831	98,403	3,191,029	.....	936,333	767,191	271,079
Michigan Central	1,805 ¹³	1,574,134	550,029	2,124,163	290,742	375,849	87,421	1,017,903	51,343	1,823,248	.....	543,138	430,385	191,573
New York Central & Hudson River	3,591	4,775,955	2,379,697	7,155,652	1,035,007	1,417,625	194,317	3,052,448	204,484	5,903,881	.....	2,381,569	1,983,637	379,031
New York, New Haven & Hartford	2,040	2,627,397	2,070,897	4,698,294	331,093	613,935	27,846	2,002,220	157,716	3,338,810	.....	287,000	1,629,189	120,018
Norfolk & Western	1,990 ¹⁴	2,434,723	310,929	2,745,652	363,260	544,106	46,497	968,658	59,325	1,881,846	.....	115,000	838,553	275,618
Norfolk & Pacific	6,028 ¹⁵	3,352,016	1,306,112	4,658,128	621,278	626,849	95,606	1,684,125	92,254	3,150,112	.....	1,888,640	1,555,562	120,885
Oregon Short Line	1,646 ¹⁶	907,644	387,185	1,294,829	196,900	128,023	23,573	363,948	37,839	750,373	.....	58,718	328,657	321,885
Pennsylvania R. R.	3,979 ¹⁷	9,188,988	2,585,565	11,774,553	1,621,969	2,002,503	168,724	4,561,077	329,484	8,683,757	.....	3,933,487	3,086,597	421,721
Pennsylvania Co.	1,416	2,737,899	625,747	3,363,646	407,241	568,157	65,718	1,345,187	86,017	2,472,320	.....	1,247,007	1,056,597	140,721
Pere Marquette	2,334	861,873	275,300	1,137,173	171,321	216,996	36,305	603,472	35,508	1,063,602	.....	179,060	135,405	199,239
Pittsburgh, Cincinnati, Chic. & St. Louis	1,467	1,962,839	611,696	2,574,535	276,360	469,523	62,030	1,090,048	66,467	1,964,428	.....	134,519	825,047	205,747
Southern Ry.	7,038	3,180,307	1,207,936	4,388,243	553,599	731,170	124,843	1,764,491	151,978	3,271,082	.....	1,533,331	1,345,660	42,962
Southern Pacific Co.	6,187 ¹⁸	3,933,517	2,575,608	6,509,125	924,056	755,981	145,624	2,038,157	229,316	4,093,134	.....	387,156	2,556,798	333,783
Texas & Pacific	1,885	719,396	290,523	1,009,919	177,937	233,135	27,012	527,012	40,977	1,000,421	.....	77,336	39,417	121,913
Union Pacific	3,473 ¹⁹	2,536,492	828,926	3,365,418	682,012	375,904	92,660	1,049,711	103,420	2,303,707	.....	1,468,915	1,311,257	54,612

TEN MONTHS OF FISCAL YEAR, 1911.

Atchison, Topeka & Santa Fe.....	7,550 ¹	\$49,465,353	\$18,982,907	\$74,797,443	\$10,619,218	\$11,788,382	\$1,485,054	\$21,876,580	\$1,578,880	\$47,348,114	\$27,449,329	.....	\$2,459,784	\$24,889,545	\$2,276,134
Atlantic Coast Line.....	4,495 ²	18,237,918	6,560,696	26,702,011	3,338,898	3,875,997	451,623	8,692,080	693,507	17,052,105	9,649,906	.....	994,000	8,655,906	98,188
Boston & Maine.....	2,243	2,137,568	1,292,226	3,429,794	467,821	678,239	47,527	1,761,124	91,701	2,875,202	833,377	.....	1,795,433	6,591,346	2,099,718
Central of New Jersey.....	6,313	15,324,219	3,917,192	20,299,520	2,049,221	3,083,117	309,097	5,902,034	400,563	11,744,032	8,555,488	.....	862,747	7,730,701	291,113
Chesapeake & Ohio.....	1,948	20,518,792	4,390,751	26,016,611	2,992,431	4,940,781	449,560	7,772,107	604,633	16,759,152	9,257,099	.....	833,873	8,413,717	1,441,946
Chesapeake & Ohio of Indiana.....	285	1,008,534	222,150	1,296,745	315,889	291,751	57,513	711,787	50,847	1,427,787	131,042	.....	37,900	168,863	.....
Chicago & North Western.....	7,744 ⁴	41,004,522	15,920,442	62,560,500	7,978,287	7,825,633	1,045,912	26,108,375	1,369,125	47,327,330	18,333,170	.....	2,627,000	15,766,511	225,154
Chicago & Alton.....	1,025 ⁵	7,657,482	3,584,416	12,135,384	1,512,062	1,922,987	404,228	4,579,977	344,624	8,763,878	3,371,505	.....	362,600	2,989,656	663,574
Chicago, Burlington & Quincy.....	9,091 ⁶	48,961,510	18,931,761	74,328,216	9,581,684	12,087,219	1,325,826	24,214,608	1,873,215	49,852,552	25,245,664	.....	2,494,383	22,659,756	3,087,067
Chicago, Milwaukee & Puget Sound.....	1,980 ⁷	10,541,015	1,223,701	12,081,784	795,550	1,253,590	291,987	4,389,443	143,350	6,873,890	5,207,894	.....	428,227	4,790,309	.....
Chicago, Milwaukee & St. Paul.....	7,511	37,930,805	11,737,006	54,753,053	6,808,876	7,631,329	1,061,492	23,939,453	921,219	40,362,369	14,390,684	.....	2,209,468	12,323,438	2,307,261
Chicago, Rock Island & Pacific.....	7,548 ⁸	34,771,994	16,237,659	54,250,899	7,730,252	7,560,491	1,577,187	21,060,451	1,385,614	39,313,795	14,937,104	.....	2,187,778	12,652,409	1,182,414
Chicago, St. Paul, Minneapolis & Omaha.....	1,744	9,015,244	3,782,750	13,689,104	1,459,616	1,577,738	236,748	3,253,779	301,669	8,859,147	4,859,957	.....	600,320	4,245,885	323,878
Cleveland, Cincinnati, Chic. & St. Louis.....	1,979	16,824,985	6,627,578	25,773,447	3,291,806	4,457,863	842,586	11,001,629	582,450	20,176,334	5,597,113	.....	813,548	4,709,655	1,760,417
Delaware, Lackawanna & Western.....	930	21,489,488	6,283,287	27,772,775	3,099,797	4,383,128	602,487	8,993,615	599,426	17,678,453	11,947,945	.....	1,359,136	10,789,656	2,211,841
Denver & Rio Grande.....	2,556 ⁹	14,448,558	4,270,831	19,579,333	2,205,866	3,460,960	479,235	6,780,920	494,245	13,421,226	6,158,107	.....	713,600	5,416,731	215,917
Erie.....	1,994 ¹⁰	29,727,800	7,527,195	40,186,540	4,376,760	6,787,699	968,359	13,448,452	823,215	26,404,485	13,782,055	.....	1,172,096	12,406,966	274,988
Great Northern.....	7,329 ¹¹	35,922,564	11,035,071	50,659,686	7,198,061	6,506,897	827,529	15,192,356	951,197	30,676,040	19,983,646	.....	2,632,601	17,499,218	1,463,138
Gulf, Colorado & Santa Fe.....	1,537 ¹²	7,057,032	2,588,596	10,360,175	1,864,859	1,571,426	240,965	4,075,456	322,492	8,075,198	2,284,977	.....	322,674	1,962,303	431,628
Lake Shore & Michigan Southern.....	1,663	26,388,517	9,423,244	40,588,783	6,489,433	6,362,426	1,003,790	14,573,127	798,328	29,226,916	11,361,867	.....	1,450,182	9,857,154	3,704,871
Lehigh Valley.....	1,431	25,710,948	3,725,031	30,486,177	4,088,187	5,097,903	814,913	9,938,001	646,846	19,456,354	11,023,803	.....	965,600	9,792,517	961,190
Louisville & Nashville.....	4,591	33,101,012	9,761,030	47,862,558	7,978,287	7,825,633	1,045,912	26,108,375	1,369,125	47,327,330	18,333,170	.....	2,627,000	15,766,511	225,154
Michigan Central.....	1,805 ¹³	16,186,798	6,259,999	25,044,124	3,353,421	3,685,177	768,342	10,592,396	496,018	19,037,354	5,956,770	.....	1,135,020	4,783,735	2,125,698
New York Central & Hudson River.....	3,591	48,751,574	25,661,982	83,627,417	11,441,013	14,549,081	2,006,931	32,262,658	2,218,023	62,477,706	21,149,711	.....	73,465	17,264,043	2,102,863
New Haven & Hartford.....	2,040	25,066,947	21,731,282	51,400,905	5,577,068	6,007,771	287,021	20,449,989	1,521,316	33,843,165	17,557,740	.....	1,153,223	30,304,000	405,973
Norfolk & Western.....	1,990 ¹⁴	25,149,023	3,499,915	29,710,665	4,539,758	5,339,785	490,121	8,052,271	605,441	19,041,057	10,669,608	.....	7,851	1,090,000	9,571,757
Norfolk Southern.....	6,029 ¹⁵	36,617,918	14,540,075	54,760,720	6,475,267	7,702,210	909,248	18,388,359	857,066	33,232,150	27,928,570	.....	2,704,190	19,532,552	1,382,592
Oregon Short Line.....	6,029 ¹⁶	36,617,918	14,540,075	54,760,720	6,475,267	7,702,210	909,248	18,388,359	857,066	33,232,150	27,928,570	.....	2,704,190	19,532,552	1,382,592
Pennsylvania R. R.....	3,979 ¹⁷	49,855,627	27,062,112	110,711,435	16,550,311	24,340,632	1,870,901	48,546,878	3,375,458	94,484,180	36,387,955	.....	4,680,987	30,863,252	6,406,498
Pennsylvania Co.....	1,416	31,975,315	6,940,868	42,493,503	4,995,259	7,371,610	784,087	15,327,694	846,098	29,334,748	13,168,755	.....	1,883,002	11,226,150	2,282,138
Pere Marquette.....	2,334	9,007,617	3,306,231	13,362,968	1,743,733	2,104,770	389,770	6,133,562	348,419	10,720,254	2,642,714	.....	570,202	2,016,259	1,487,913
Pittsburgh, Cincinnati, & St. Louis.....	1,467	22,305,684	6,795,291	32,718,118	3,931,707	6,043,437	725,881	12,416,624	657,814	23,775,463	8,942,655	.....	8,918	1,366,290	7,567,447
Pittsburgh, Cincinnati, & St. Louis.....	7,038	33,573,664	13,445,422	50,906,012	6,279,298	8,100,308	1,287,960	17,273,789	1,482,801	34,424,156	16,481,856	.....	1,824,776	14,557,140	480,867
Southern Pacific Co.....	6,187 ¹⁸	44,427,011	26,561,615	76,301,427	9,492,568	9,618,358	2,126,153	20,929,711	2,318,670	43,965,360	32,315,987	.....	2,869,982	29,610,699	3,599,138
Southern Pacific.....	1,885	9,299,979	3,458,311	13,710,436	1,632,884	2,162,581	212,657	5,648,044	371,203	10,467,351	3,343,085	.....	2,934	5,032,421	811,989
Texas & Pacific.....	3,473 ¹⁹	30,361,730	9,234,664	43,330,129	4,566,790	4,979,933	1,002,518	11,327,393	1,066,829	22,943,463	20,386,666	.....	1,549,067	18,786,082	1,398,496
Union Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Mileage operated on April 30, 1910.....

1,746 miles; 16,195 miles; 15,849 miles; 15,109 miles; 15,961 miles; 15,129 miles; 15,158 miles;

Indicates Deficits, Losses and Decreases.

The Railroad Commission of Louisiana, finding that its order now in effect provides that, if the products from the sugar cane are not shipped by the same railway, the rate shall be 100 per cent. higher than the rate when the product is reshipped by the carrier bringing in the sugar cane, and believing this to be an unreasonable provision in the tariff, has ordered that on joint through shipments of sugar cane, the rates as authorized by the commission, and now in effect, will apply when the product is shipped out by the carrier delivering the sugar cane, deducting 10 per cent. from the sum of each line's local rate.

The Railroad Commission of Louisiana has adopted the rule providing that all tariff publications or supplements thereto must indicate increases made in existing rates, rules, or classifications, by the use of black-face type or by the use of a uniform symbol throughout the schedule. All tariff duplications or supplements thereto which are filed with the commission after June 1, 1911, must also indicate reductions made in existing rates, rules, or classifications, by the use of italic type or by the use of a uniform symbol throughout the schedule. Clear explanation of the use of distinctive type or symbol must be made in the tariffs or classifications.

COURT NEWS.

The Interstate Commerce Commission has begun to enforce the ash pan law. At Indianapolis, Ind., last week a suit was filed asking penalties aggregating \$400 for violation of the law. The suit was entered by the United States District Attorney against the Chicago, Indianapolis & Louisville. The complaint alleges that the company operated trains March 18 and 29, with locomotives, the ash pans of which were so constructed that it was necessary for an employee to go under the engine to empty them. Similar suits will be filed against other railways.

A verdict for \$62,638.49 in favor of seven coal companies against the Pennsylvania Railroad, which was charged with discrimination in favor of the Berwind-White Coal Company and others, was rendered by a jury in the United States Circuit Court at Philadelphia, May 25. The plaintiff most heavily interested was the Mount Carbon Coal & Coke Company. Originally the suit was brought by eleven coal companies, but four were subsequently eliminated when they failed to show evidence of direct damage. The case had been on trial for two years. The charge of the coal companies was that it cost them \$1.55 a ton to ship coal to South Amboy, which, with the lighterage charge, made their bills to delivery points in New York harbor \$1.73, whereas at Harsimus pier, Jersey City, used exclusively by the Berwind-White Company, the total charge has been only \$1.61½. The plaintiffs asked the court to award them 11½ cents as overcharge on each ton shipped.

The Appellate Division of the Supreme Court of New York in the suit of Robinson against the New York Central & Hudson River, has sustained the demurrer for the plaintiff against the company's claim that for a piece of baggage lost the owner could recover only \$150, that being the limit printed on the ticket. In this case the baggage lost was worth \$550 and the court evidently holds that the owner may rightfully recover the whole amount. The notice to the public says that baggage valued at more than \$150 may be insured for its full value by the payment of an extra charge, but the plaintiff claims that he should have been asked the value of his baggage by the station man who checked it. This claim the court apparently sustains. It appears that on the tariff sheet, under the instructions to baggage men, there is a clause notifying them not to ask the value of baggage; that the clause relative to insurance applies only in cases where the passenger voluntarily states in value of his baggage. This clause has been printed in the instructions for the benefit of agents who act also as agents for express companies, where the practice is to ask shippers the value of the articles shipped. The decision of the Supreme Court was by a vote of 3 to 2.

The Board of Communications has accepted a Chinese merchant's petition for the right to construct a railway from Canton, China, to Heungshan, the length of which will be over 68 miles.

Railway Officers.

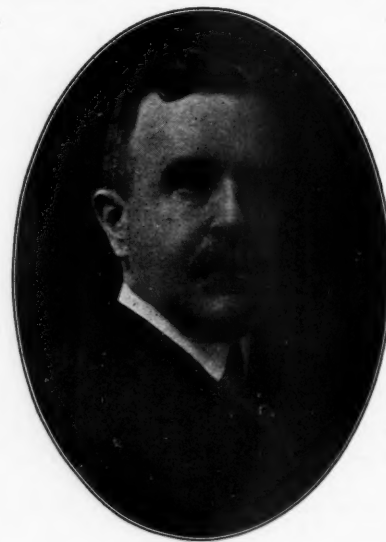
ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

Charles E. Field has resigned as general claim agent of the Chicago, Indianapolis & Louisville.

W. L. Chew has been appointed general claim agent of the Texas & Pacific, with headquarters at Dallas, Tex.

James H. Hustis, assistant general manager of the Boston & Albany, with office at Boston, has been appointed vice-president, effective June 5, and that road is now operated separately



J. H. Hustis.

from the New York Central & Hudson River, under the direction of Vice-president Hustis, who reports directly to President W. C. Brown. Mr. Hustis was born January 11, 1864, in New York City, and was educated in the public schools. He began railway work in 1878 with the New York Central as office boy for General Superintendent J. M. Toucey. In 1891 he was appointed trainmaster of the Harlem division; in 1893 assistant superintendent, and in 1900 superintendent of the same division. The same year he was appointed to the River division; in August, 1902, to the Rome, Watertown & Ogdensburg division, and in October, 1906, he went to the Hudson division. In March, 1907, he was appointed general superintendent of the Western district, with office at Syracuse; and then, in October of the same year, he went to the Boston & Albany as assistant general manager, which position he has held until now.

William A. Cormier, who has been appointed auditor of the Boston & Albany, with office at Boston, was born at Spencer, Mass., and entered the service of the Boston & Albany at that



W. A. Cormier.

place as freight clerk in 1880. In 1883 he went to the Chicago & Alton; a year later he came back to the Boston & Albany, and was ticket seller at Palmer; and then two years later went back West, working in the office of the auditor of ticket accounts of the Chicago, Rock Island & Pacific. He returned to the Boston & Albany in February, 1887, and was statistical clerk in the office of the general ticket agent. From there he went to the freight office at East Albany; and in 1889 resigned to take a place with the auditor of disbursements of the New York Central. He has been in that department ever since holding the position of assistant auditor of miscellaneous accounts since February 1, 1910.

M. C. Markham, assistant to the first vice-president of the Missouri Pacific, has been appointed assistant to the president, with headquarters at St. Louis, Mo.

G. R. Martin, assistant comptroller of the Great Northern, has been appointed comptroller, with headquarters at St. Paul, Minn., succeeding J. G. Drew, resigned.

J. L. Terry has been appointed assistant to the vice-president and purchasing agent of the Denver, Laramie & Northwestern, with office at Denver, Colo., succeeding J. U. Mock, resigned.

W. S. Trowbridge has been appointed assistant auditor of the Boston & Albany; W. J. Turck has been appointed auditor of freight accounts, and M. R. Croke has been appointed auditor of passenger accounts, all with offices at Boston, Mass.

M. J. Murphy, assistant secretary and assistant auditor of the Chicago & Western Indiana and the Belt Railway, has been elected secretary and auditor, succeeding M. J. Clark, and W. S. Kies, general solicitor, has been appointed general counsel, both with offices at Chicago.

J. W. Kendrick has resigned as vice-president in charge of operation of the Atchison, Topeka & Santa Fe. His duties have been assumed by W. B. Storey, Jr., vice-president in charge of construction, whose jurisdiction has been extended over the operating department, and whose headquarters will be at Chicago.

John J. Bernet, whose appointment as assistant to C. E. Schaff, vice-president of the Lake Shore & Michigan Southern and other New York Central Lines west of Buffalo, N. Y., with head-



John J. Bernet.

quarters at Chicago, has been announced in these columns, was born February 9, 1868, at Brant, Erie Co., N. Y. He began railway work with the Lake Shore & Michigan Southern on October 19, 1889, as telegraph operator, and was promoted to train dispatcher at Buffalo, N. Y., on March 12, 1895, remaining in that position until April 2, 1901, when he was made trainmaster of the eastern division. On March 6, 1903, he was appointed assistant superintendent of the eastern division and was promoted to the superintendency of that division on February 1, 1905. He was made assistant general superintendent on November 22, 1905, and the following October, was appointed general superintendent, from which position he was recently promoted to assistant to the vice-president of the New York Central Lines west of Buffalo, including the Lake Shore & Michigan Southern; Michigan Central; Cleveland, Cincinnati, Chicago & St. Louis; Lake Erie, Alliance & Wheeling; Dunkirk, Allegheny Valley & Pittsburgh; Lake Erie & Western; Peoria & Eastern; Cincinnati Northern; Chicago, Indiana & Southern; Indiana Harbor Belt; Toledo & Ohio Central and Zanesville & Western.

Operating Officers.

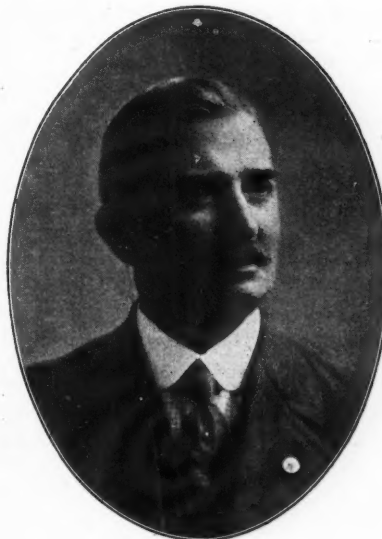
William A. Webb, assistant to the vice-president of the Colorado & Southern, has been appointed general manager of the Texas Central, with headquarters at Waco, Tex.

John M. Eagan has been appointed superintendent of the Mississippi division of the Illinois Central, with office at Water Valley, Miss., succeeding Jacob G. Neudorfer, resigned.

R. H. Howard, engineer maintenance of way of the New Orleans Great Northern, has been appointed general manager, with headquarters at Bogalusa, La., succeeding N. G. Pearsall, resigned.

A. S. Ingalls, assistant general superintendent of the Lake Shore & Michigan Southern, has been appointed general super-

intendent, with office at Cleveland, Ohio, succeeding J. J. Bernet, promoted. See Executive, Financial and Legal Officers.



L. A. Anthony.

his recent appointment as superintendent of car service. For the last few years he has been treasurer of the Railroad Young Men's Christian Association, at Springfield.

L. A. Anthony, car service agent of the Boston & Albany, at Springfield, Mass., has been appointed superintendent of car service. Mr. Anthony was born March 10, 1858, at Scotland, Conn., and in 1878 was appointed record and mileage clerk of the Railway Clearing House Association, at Boston, Mass. He was later assistant chief clerk, and then chief clerk in the mileage department of that association, with which he remained until its dissolution. In August, 1890, he was appointed car service agent of the Boston & Albany, which position he held at the time of

Traffic Officers.

Benn C. Leavenworth has been appointed agent of the Star Union Line at Grand Rapids, Mich., succeeding E. J. Keate, deceased.

S. L. Hall has been appointed a traveling passenger agent of the Lake Tahoe Railway & Transportation Company, with office at Los Angeles, Cal.

H. M. Biscoe, assistant freight traffic manager of the Boston & Albany, has been appointed traffic manager, with office at Boston, Mass. Mr. Biscoe was born July 3, 1869, at Westboro, Mass., and was graduated from Yale University in 1892. He began railway work the same year in the ticket auditor's office of the Boston & Albany. In 1893 he went to the Central Vermont, where he had a position in the general freight office. He remained in that position until March, 1896, when he went back to the Boston & Albany and was appointed clerk in the general traffic manager's office. From April, 1898, to May, 1905, Mr. Biscoe was foreign freight agent of the same company at Boston; following which he was appointed general freight agent. Since



H. M. Biscoe.

February 15, 1910, he has been assistant freight traffic manager of the road, reporting to the general traffic manager at New York City.

J. H. Brown has been appointed general freight and passenger agent of the Gulf & Ship Island, with office at Gulfport, Miss., succeeding J. L. Hawley.

I. M. Griffin, division freight agent of the International & Great Northern at Ft. Worth, Tex., has been appointed assistant

general freight agent of the Texas & Pacific, with headquarters at Dallas, Tex.

W. F. Gleason, having resigned as general freight and passenger agent of the Ocean Shore, the office has been abolished and the duties assumed by L. H. Landis, general manager, whose headquarters are at San Francisco, Cal.

G. B. Harper, traveling industrial and immigration agent of the Illinois Central, at Memphis, Tenn., has been appointed assistant industrial immigration commissioner, with office at Memphis. Frank Henius succeeds Mr. Harper.

J. A. Dolan, general agent of the Erie Railroad, at Denver, Colo., has been appointed assistant general eastern passenger agent, with office at New York, and H. W. Hawley has been appointed division passenger agent, with office at Cleveland, Ohio.

R. W. Drew, district freight agent of the Canadian Pacific at Saskatoon, Sask., has been appointed division freight agent at Nelson, B. C., succeeding W. R. Haldane, resigned. W. H. Allisson succeeds R. W. Drew as district freight agent. D. C. MacDonald has been appointed division freight agent of the Saskatchewan division, with office at Regina, Sask.

J. M. Ball, general agent of the freight traffic department of the International & Great Northern at San Antonio, Tex., has been appointed division freight agent at that place, and J. W. Daly, general agent of the freight traffic department at Galveston, Tex., has been appointed division freight agent at Galveston. John G. Worrall has been appointed division freight agent with office at Houston, Tex.

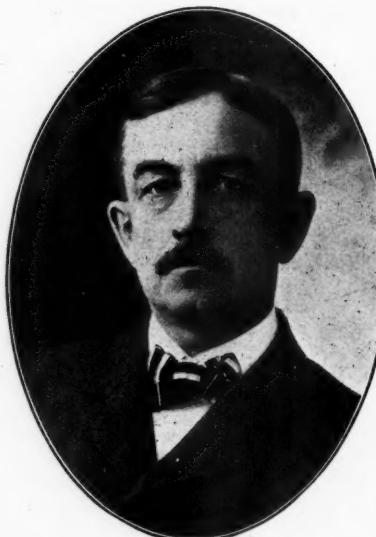
Richard Van Ummersen, assistant general freight agent of the Boston & Albany, has been appointed general freight agent, with office at Boston. Mr. Van Ummersen was born in 1874 at Boston, and was educated in the public schools of Cambridge. He entered the service of the Boston & Albany in July, 1891, and held various positions in the ticket auditor's office, until he went to the general freight office, in February, 1896. For a time he was in this department as claim agent, and was later appointed tariff clerk, and then rate clerk, which position he held until June, 1900, when he was appointed chief clerk. Six years later he was appointed division freight agent, with office at Worcester. In November, 1907, he returned to Boston as assistant general freight agent, which position he held at the time he assumed his new title of general freight agent.

A. S. Hanson, general agent, passenger department of the Boston & Albany, at Boston, Mass., has been appointed general passenger agent. Mr. Hanson began railway work in 1872 with the Illinois Central, at Chicago, and since 1879 has been with the Boston & Albany. He was for many years general passenger agent of that road, and when the New York Central took control of this property he was made general agent, which position he held at the time of his recent appointment as general passenger agent.

C. Hanson, commercial agent of the International & Great Northern at Waco, Tex., has been appointed division freight agent, with office at Ft. Worth, to succeed I. M. Griffin. J. W. Byars, commercial agent at Dallas, Tex., has been appointed division freight agent, with headquarters at Waco, Tex. Frank J. Burke, commercial agent at Denver, Colo., has been appointed division freight agent at Dallas, Tex. J. S. Houston,

general agent of the International & Great Northern at St. Louis, Mo., has been appointed assistant general freight agent of that road and the Texas & Pacific, with headquarters at St. Louis.

Robert D. Moore, whose appointment as general freight and passenger agent of the Mississippi Central, with office at Hattiesburg, Miss., has been announced in these columns, was born at Atlanta, Ga., and began railway work about 1888 in the claim department of the Southern Railway, at Washington, D. C. He was later transferred to the general freight office, and then went to the Illinois Central in the general freight office, at Louisville, Ky. For the past four years Mr. Moore has been in the service of the Atlanta, Birmingham & Atlantic, with office at Atlanta, Ga., and was assistant general freight agent when he left the service of that road on March 1, of this year.



F. E. Pettengill.

F. E. Pettengill, who has been appointed freight claim agent of the Boston & Albany, with office at Boston, was born in Worcester, Mass., and has been in the service of the Boston & Albany over 30 years. His first position with a title was that of station agent at Webster in 1884, but before that he had been a brakeman and also a clerk in the accounting department. He was appointed station agent at Chatham in 1888; and at Pittsfield in 1898; local freight agent at Springfield in 1902, and special agent of the transportation department, reporting to the assistant general

manager, in 1909. From this place he is now promoted to freight claim agent, with office at Boston, as above noted.

The following changes and appointments have been made by the Southern Railway: E. H. Shaw, assistant freight traffic manager, has been transferred from Washington, D. C., to Atlanta, Ga.; J. A. Smith, Jr., division freight agent, Charleston traffic division, has been transferred from Charleston, S. C., to Augusta, Ga.; Howell Peoples, division freight agent, Atlantic Traffic division, has been transferred from Atlanta to Macon; I. L. Graves, general freight agent, at Memphis, Tenn., has been appointed coal freight agent, at Atlanta, and W. A. Turner, general freight agent, at Chattanooga, Tenn., succeeds Mr. Graves. L. L. McCleskey, assistant to general freight agent, has been appointed assistant general freight agent, with office at Atlanta, and his former position has been abolished. C. E. Bell, chief clerk in the general freight office at Atlanta, has been appointed assistant general freight agent, at Atlanta. D. Cardwell, division freight agent, at Columbia, S. C., has been appointed assistant general freight agent, with office at Columbia, and G. K. Caldwell succeeds Mr. Cardwell. E. C. Morgan, commercial agent, at Chattanooga, Tenn., has been appointed district freight agent, with office at Chattanooga, and Taylor Williams, soliciting freight agent, succeeds Mr. Morgan. H. G. Duke has been appointed a freight soliciting agent, with office at Selma, Ala., succeeding W. R. Wyatt, transferred. E. P. Johnson has been appointed traveling freight agent, at Jacksonville, Fla., succeeding T. E. King, resigned to go into other business. Marcus M. Emmert, rate clerk in the office of the freight traffic manager, at Washington, has been appointed commercial agent, at Lynchburg, Va.; R. L. Potts has been appointed freight soliciting agent, at Raleigh, N. C.; H. D. Luckett, chief clerk to the division freight agent, at Asheville, N. C., has been appointed commercial agent, at Charleston, S. C.; H. S. Du Val, commercial agent, at Augusta, has been appointed traveling freight agent, at Albany, Ga., succeeding Thomas O'Connor, resigned, and the office of Harvey Kidwell, traveling freight agent, at Atlanta, has been transferred to Macon.



R. Van Ummersen.

Engineering and Rolling Stock Officers.

P. B. Motley has been appointed engineer of bridges of the Canadian Pacific, with office at Montreal, Que.

W. H. Penfield has been appointed assistant chief engineer of the Chicago, Milwaukee & St. Paul, with office at Chicago, succeeding E. O. Reeder.

Kenneth B. Duncan, assistant engineer of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been transferred to Topeka, Kan., as assistant engineer of the Santa Fe system.

J. E. Hickey, mechanical superintendent of the Mexico North Western, at Madera, Chihuahua, Mex., has been appointed superintendent of motive power and equipment, with office at Madera.

R. D. Smith, assistant superintendent of motive power of the Boston & Albany, has been appointed superintendent of motive power and rolling stock, with office at Boston. Mr. Smith was born in New York City, and was educated in the public schools of New York and Albany. He entered railway service in 1872 as machinist apprentice with the Delaware & Hudson Canal Company and served with that company as machinist, locomotive fireman and locomotive engineer until 1881. He was then engaged with the Chicago, Burlington & Quincy at Aurora, as machinist, and was foreman of shops at Aurora, from 1883 until 1885. From April, 1885, to July, 1888, he was general foreman of the Chicago, Burlington & Quincy shops at Chicago, and in July, 1888, was appointed master mechanic of the Chicago division of the same road, remaining in that position until April, 1902, when he was appointed superintendent of motive power of the Burlington lines west of the Missouri river. In October, 1906, he was appointed mechanical expert for the New York Central's western lines, and was in charge of steel car construction until August, 1907, when he was appointed assistant superintendent of motive power of the New York Central at New York. On October 1, 1907, he was put in charge of the locomotive and car department of the Boston & Albany, with the same title, and has been in that position until his present appointment as above noted.

E. Z. Hermansader, assistant master mechanic of the Chicago, Milwaukee & St. Paul at Green Bay, Wis., has been appointed master mechanic at Dubuque, Ia., succeeding Walter Liddell, resigned.

J. H. Stinson, roadmaster of the Southern Kansas, Pecos & Northern Texas, Eastern of New Mexico and Pecos River, at Amarillo, Tex., has been transferred to Canadian, Tex., as roadmaster of the Southern Kansas.

F. L. Ellingwood has been appointed superintendent of building construction of the Canadian Pacific, with headquarters at Montreal, Que. Mr. Ellingwood is at present in charge of the extension being made to the Windsor street station in Montreal.

E. L. Crugar has been appointed assistant chief engineer of the Toledo, St. Louis & Western, and the Chicago & Alton, with office at Chicago, Ill. Mr. Crugar formerly was resident engineer of the Chicago & Alton at Bloomington, Ill.

B. H. Briggs, roadmaster of the Erie division of the Buffalo, Rochester & Pittsburgh, has been promoted to roadmaster of Division 2, with office at Springville, N. Y., succeeding Henry Ware, retired under the pension rules, and J. C. Horning, extra gang foreman, has been promoted to roadmaster of the Erie division, with office at Mount Jewett, Pa.

J. D. Maupin, master mechanic of the Trinity & Brazos Valley, has been appointed superintendent of motive power, with

office at Teague, Tex., succeeding C. H. Seabrook, resigned. The position of master mechanic heretofore held by Mr. Maupin is abolished. L. M. Jacobs, roundhouse foreman, has been appointed general foreman, and J. W. Ward, succeeds Mr. Jacobs as roundhouse foreman.

F. S. Anthony, whose appointment as superintendent of motive power and rolling stock of the Texas & Pacific, was announced in the *Railway Age Gazette* of May 26, was born in Reading, Pa., in 1859. He served as machinist apprentice in the shops of the Philadelphia & Reading, at Reading, Pa., and subsequently until 1894 was with the Atchison, Topeka & Santa Fe at Nickerson, Kan., and Arkansas City, Kan. He was then for four years mechanical department foreman of the Illinois Central at Chicago. In 1898 he was made master mechanic of the Plant system and Atlantic Coast Line at Savannah, Ga., and in 1904 was appointed master mechanic of the Lehigh & Northeastern. In February, 1908, he became master mechanic of the International & Great Northern at Palestine, Tex., being promoted to the position of superintendent of machinery in November, 1909, which position he resigned on June 1 to become superintendent of motive power and rolling stock of the Texas & Pacific, with headquarters at Marshall, Tex.

Purchasing Officers.

J. E. Sargeant has been appointed purchasing agent of the St. Louis Southwestern, with office at St. Louis, Mo.

F. D. Reed, assistant to the vice-president of the Rock Island Lines, in addition to his present duties, has been appointed purchasing agent, with headquarters at Chicago, to succeed J. M. McCarthy, resigned. W. R. Owen has been appointed assistant purchasing agent.

E. H. Bankard, purchasing agent of the Baltimore & Ohio Lines, with headquarters at Baltimore, Md., has recently had his authority extended over the Cincinnati, Hamilton & Dayton.

Frederic A. Ryer, who has been appointed purchasing agent of the Boston & Albany, with office at Boston, was born in New York City in 1860. He received his education in the public schools and at the College of the City of New York, being a member of the class of 1881. Mr. Ryer began railway work on February 15, 1887, as a clerk in the purchasing department of the New York Central & Hudson River, and since that time has filled the position of clerk in the various departments of that office, later becoming chief clerk, then lumber agent, and finally

assistant to purchasing agent, which position he has held until now.

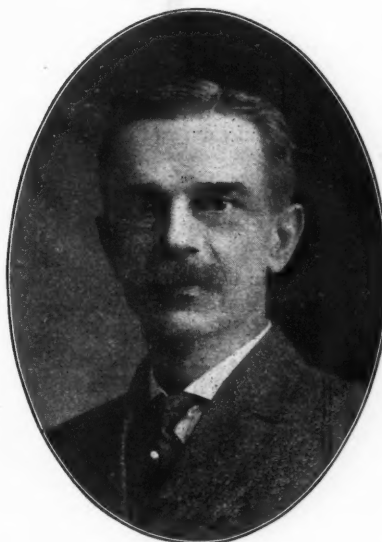
OBITUARY.

Captain Danforth O. Lombard, formerly timber agent of the New York, New Haven & Hartford, and for 23 years in the purchasing department of that road, died on May 29, in Guilford, Conn., at the age of 73 years.

Charles L. De Fuentes, for over 10 years chairman of the Louisiana Railway Commission, died at his home in New Orleans on June 1. Mr. De Fuentes was the first chairman of the Louisiana Commission, which was organized in 1898. He served continuously as chairman until a little over a year ago, when he resigned the chairmanship, but retained his membership on the commission until the expiration of his term in December of last year.



R. D. Smith.



F. A. Ryer.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

THE GRAND TRUNK PACIFIC has ordered 15 Pacific type locomotives, 20 consolidation locomotives and 10 switching locomotives from the American Locomotive Company. This company is now in the market for 81 locomotives.

THE TOLEDO & INDIANA TRACTION COMPANY has ordered one electric locomotive from the Baldwin Locomotive Works. The electrical equipment will be furnished by the Westinghouse Electric & Manufacturing Company.

THE IMPERIAL GOVERNMENT RAILWAYS OF JAPAN have ordered 6 eight-wheel locomotives from the American Locomotive Company. The dimensions of the cylinders will be 18 in. x 26 in.; the diameter of the driving wheels will be 72 in., and the total weight in working order will be 115,000 lbs.

THE IMPERIAL STEEL WORKS OF JAPAN has ordered 2 six-wheel switching locomotives from the American Locomotive Company. The dimensions of the cylinders will be 14 in. x 24 in.; the diameter of the driving wheels will be 53 in., and the total weight in working order will be 75,000 lbs.

CAR BUILDING.

THE CHICAGO, BURLINGTON & QUINCY is in the market for 5 all steel postal cars.

THE MISSOURI, KANSAS & TEXAS will build 249 box cars at the company's shops at Parsons, Kan.

THE CHILEAN GOVERNMENT is said to be making inquiries for 10 coaches. This item is not confirmed.

THE TEXAS TRACTION COMPANY, Dallas, Tex., has ordered 4 motor and 4 trailer cars from the American Car Company.

THE MICHIGAN UNITED RAILWAYS COMPANY, Lansing, Mich., has ordered 7 city cars and one interurban car from the McGuire-Cummings Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered 10 baggage cars from the Pullman Company and 15 baggage cars from the American Car & Foundry Company.

THE NEW YORK CENTRAL LINES are in the market for 6 dining cars, of which 3 will be for the Lake Shore & Michigan Southern, and 3 for the New York Central & Hudson River.

THE NORTHERN TEXAS TRACTION COMPANY, Fort Worth, Tex., was mentioned in the *Railway Age Gazette* of May 5 as having ordered four interurban motor cars from the St. Louis Car Company. The capacity of these cars will be 54 persons. The weight will be 72,000 lbs. The inside measurements will be 40 ft. long and 8 ft. 6 in. high; the over-all measurements will be 52 ft. long, 9 ft. wide and 13 ft. high. Both the bodies and the underframes will be of wood. The special equipment will be as follows:

Axles	Hammered steel
Bolsters, body	Steel
Bolsters, truck	Steel
Brakes	Westinghouse
Brake shoes	M. C. B. cast iron
Brasses	Standard
Couplers	Van Dorn
Curtain fixtures	Forsythe
Curtain material	Pantasote silk
Doors	Side
Heating system	Consolidated
Journal boxes	M. C. B.
Lighting system	Electric
Paint	Pullman body color
Platforms	Steam coach type
Roofs	Monitor
Seats	Heywood Brothers & Wakefield
Seat covering	Tan leather
Side bearings	Wrought iron plates
Springs	Full elliptic
Trucks	Baldwin
Ventilators	28
Vestibules	Stationary round front
Vestibule trap doors	O. M. Edwards
Wheels	Rolled steel
Window fixtures	O. M. Edwards
Other special equipment	G. E.—73 motors
	Hunter destination signs

IRON AND STEEL.

THE DELAWARE & HUDSON has ordered 2,000 tons of rails.

THE NORTHERN PACIFIC is negotiating for 50,000 tons of rails.

THE MISSOURI PACIFIC is said to have ordered 40,000 tons of rails.

THE CONEY ISLAND & BROOKLYN has ordered 1,300 tons of rails.

THE MISSOURI, KANSAS & TEXAS has ordered 52,000 tons of rails.

THE LOUISVILLE & NASHVILLE is in the market for 1,700 tons of bridge material.

THE ISTHMIAN CANAL COMMISSION will receive bids until July 18 on rails. Circular 635.

THE FERNWOOD & GULF has ordered 1,000 tons of rails from the Tennessee, Coal, Iron & Railroad Company.

THE BALTIMORE & OHIO has ordered 23,050 tons of rail. This order will be divided as follows: 13,050 from the United States Steel Corporation; 7,500 from the Cambria Steel Company; and 2,500 from the Bethlehem Steel Company. The greater part of this order will consist of 100-lb. and 90-lb. rails.

GENERAL CONDITIONS IN STEEL.—The Steel Corporation produced more steel in May than in April, although the contrary was expected. Last month production was at the rate of about 11,000,000 tons a year. Shipments were about the same as in the previous month. May earnings of the Steel Corporation are now expected to slightly exceed those of April and the earnings for the current quarter in all probability will be greater than in the first quarter. Since the first of the month there has been a slight improvement in the steel industry, but no marked improvement is looked for until the end of the month.

MACHINERY AND TOOLS.

THE ILLINOIS CENTRAL recently issued a list of machine tools which includes the following:

For Burnside shops—Chicago:

- 1 72-in. radial drill.
- 1 cold saw cutting off machine.
- 1 1½-in. steel heading and forging machine.
- 1 power pipe machine.
- 1 48-in. x 14-ft. milling machine.

For Paducah, Ky., shops:

- 1 22-in. x 8-ft. high speed engine lathe.
- 1 22-in. x 10-ft. high speed engine lathe.
- 1 36-in. x 14-ft. high speed engine lathe.
- 1 18-in. x 8-ft. cone lathe.
- 1 30-in. shaper.

For Mattoon, Ill., shops:

- 1 18-in. x 8 ft. engine lathe.
- 1 20-in. x 8-ft. engine lathe.
- 1 10,000-lb. pneumatic geared hoist.

For Centralia, Ill., shops:

- 1 30-in. x 12-ft. engine lathe.

In connection with the plan to unify the government railways and to establish so-called "network of transportation lines," 101 applications have been made to build narrow-gage railways in Japan. The number of licenses issued under the above applications has now reached 47, and additional applications are continually being received. The estimated cost for the construction of the narrow-gage railways for which licenses have been granted is \$21,000,000, according to the press of Tokyo. In addition, a considerable number of locomotives and cars are required for the government railways already constructed, and orders for the same are being placed through the representatives in Japan of foreign manufacturers and sales agents. In case the railways in Japan are broadened to the standard gage, there will be extensive demands for railway equipment of various kinds. In a general sense, orders for railway equipment are actively sought by representatives or agents of foreign manufacturers now located in Japan. Manufacturers not having such connections in Japan may either desire to investigate the possibilities of his field through a special representative or by communicating with the Railway Bureau, Department of Communications, Tokyo.

Supply Trade News.

The McKen Motor Car Company, Omaha, Neb., has received an order from the Ann Arbor for a third 70-ft. motor car. There are now 109 of these cars in service in the United States.

The New York office of Knowles & Wollaston, London, Eng., manufacturers of the K. & W. graphite lubricator, has been moved from 50 Church street, to 18 East Thirty-fourth street.

Walter B. Leach, who has for several years been general manager and treasurer of the Hunt-Spiller Manufacturing Corporation, Boston, Mass., has been elected president, succeeding William Prescott Hunt, deceased. Mr. Leach is now president and general manager. Frederic B. Goff has been made treasurer of the company.

The Chambers throttle valve, made by the Watson-Stillman Company, New York, has been specified on 63 new locomotives for the Southern Railway; on 30 for the Queen & Crescent; on 8 for the Mobile & Ohio; on 25 for the Seaboard Air Line; on 35 for the Atlantic Coast Line; and on 5 for the New Orleans & Northeastern.

Fairbanks, Morse & Company, Chicago, have delivered a passenger motor car to the Alaska Northern, Seward, Alaska, and have received an order from that company for another car. The car has a capacity of 35 passengers, with separate compartments for express and baggage. The motive power is a 4-cycle gasoline engine, mounted on the truck.

The report of J. G. White & Co., New York, for the year ended February 28, shows that the total surplus at the end of the year was \$485,529, as compared with \$391,394 a year before. Deferred charges and plant and tool equipment, less depreciation, was \$148,902; as compared with \$331,160 for 1910. Securities owned increased from \$1,765,816 in 1910 to \$2,317,959 in 1911. The investments of the company were successful and new business was large in spite of adverse conditions.

The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has received an order from the Seattle-Everett Traction Company, Bellingham, Wash., for a quadruple equipment of No. 304 railway motors. This company has also received an order from the St. Joseph Railway, Light & Power Company, St. Joseph, Mo., for 10 single equipments of No. 307, split frame, interpole railway motors. The Pittsburgh Railways Company has ordered 53 quadruple equipments of No. 306-CD box frame railway motors from this company, and the San Antonio Traction Company has placed an order for 20 double equipments of No. 92-A interpole railway motors. The Parkersburg, Marietta & Interurban Railway Company, Parkersburg, W. Va., has ordered 2 quadruple equipments of No. 306 split frame, interpole railway motors. The North Jersey Construction Company, Paterson, N. J., has placed an order for 2 quadruple equipments of No. 306 interpole railway motors. The Great Falls & Old Dominion, Washington, D. C., has ordered 4 quadruple equipments of No. 93-A railway motors, and the Cincinnati Traction Company has ordered a quadruple equipment of No. 303 railway motors. The Boise Railway Company, Boise, Idaho, and the Union Street Railway Company, New Bedford, Mass., have each ordered 2 double equipments of No. 101-B motors. The Lehigh Valley Traction Company, Allentown, Pa., recently placed an order for 4 quadruple equipments of No. 304 interpole railway motors. The Alton, Jacksonville & Peoria, Alton, Ill., has placed an order for 5 quadruple equipments of No. 304 interpole railway motors, and the Boston Elevated recently ordered 20 equipments of No. 301 interpole railway motors.

TRADE PUBLICATIONS.

TELEPHONES.—The Western Electric Company, Chicago, has published bulletin No. 1080 on Railroad Telephone and Selective Apparatus in which apparatus to fill every requirement of this service is listed. A four-page insert is devoted to the selector, with photographs of the installations of this apparatus on three large trunk lines. The selector and selector sets for local and common battery signaling are described in detail, and the advantages of the standard Western Electric telephone and selective equipment are pointed out. Prices and full information on the various types are included.

Railway Construction.

New Incorporations, Surveys, Etc.

AKRON, CANTON & YOUNGSTOWN.—An officer writes that a contract has been given to the P. T. McCourt Co., Akron, Ohio, for work on a section of eight miles from Akron to Mogadore. The plans call for a line from Akron to Youngstown, about 46 miles. H. B. Stewart, president, Canton, and F. E. Bissell, chief engineer, 317 Everett building, Akron. (June 2, p. 1296.)

ANGELINA & NECHES RIVER.—An officer writes that a contract has been let to J. S. Moore, to build an extension northeast to Chireno, Tex., about 15 miles. The line is already in operation from Keltys, east to Naclina, 20 miles. (May 12, p. 1132.)

BISMARCK, BELLEVUE VALLEY & WESTERN.—An officer writes that contracts are to be let this month, or as soon as surveys, which are now being made, are completed. The projected route is from Bismarck, Mo., west via Caledonia and Belgrade to Sunlight, 20 miles. The line is eventually to be extended to Salem. There will be two steel bridges, each about 150 ft. long. The line is being built to carry timber products, ore, fruit, grain and livestock. E. E. Evans, president, Bismarck, and H. Rohwer, chief engineer, 700 Fullerton building, St. Louis.

BUFFALO SOUTHERN (Electric).—An officer is quoted as saying that an extension of this road will be built to East Aurora, N. Y.

CANADIAN NORTHERN.—According to press reports, bids will be asked for at once to build around the north shore of Lake Superior, from Stillwood, Ont., which is 40 miles west of Sudbury, northwest, thence west to Port Arthur, about 550 miles. It is expected that it will take about three years to complete the work. (May 26, p. 1222.)

CANADIAN PACIFIC.—According to press reports, this company has completed surveys for a line from Wilkie, Sask., northwest through the Cold Lake country, Alb., to a connection with a line projected from Fort McMurray.

CENTRAL TERMINAL RAILWAY.—Application has been made by this company for a charter in Illinois, with \$2,000,000 capital and office at Chicago, to build from Forest Park, Cook county, Ill., to Chicago. The incorporators include: D. R. M. McLennar, C. E. Vroman, J. C. Vroman, F. S. Munro and J. W. Hiner, all of Chicago.

CENTRALIA ELECTRIC LIGHT & TRACTION COMPANY.—Incorporated in Washington to build from Centralia, Wash., to Rochester, 15 miles. W. Copping and N. W. Mills, Centralia, are incorporators.

CHEHALIS & COWLITZ.—Construction work has been started, it is said, on a line to connect Chehalis, Wash., and Cowlitz. The company expects to have the work finished by November 1. G. Robinson and H. C. Hoffman, Chehalis, are interested. (March 31, p. 813.)

CHICAGO, ROCK ISLAND & PACIFIC.—An officer writes that, although surveys are being made between Malvern, Ark., and Camden, the company does not intend to build an extension to Eldorado, or any other point than between the two places named above. (June 2, p. 1296.)

COLORADO & RED CANYON.—Under this name a line is to be built from Hotchkiss, Colo., southeast to Crawford and Maher, about 10 miles. A line is also projected from Cedaredge to a point on the Denver & Rio Grande near Austin. G. R. Harper, Milwaukee, Wis., and E. P. Priest, Delta, are interested.

CONEWAGO & SOUTHERN.—A contract is said to have been given to S. S. Johnson, Millersburg, Pa., to build from Biglerville, Adams county, southwest to Cashtown, eight miles. It is expected to begin the work by July. H. W. Hamblin, president, Harrisburg, and D. M. Sheely, treasurer, Cashtown. (May 19, p. 1186.)

CUMBERLAND VALLEY.—According to press reports, an ordinance has been passed authorizing this company to construct a high line through Chambersburg, Pa. Construction work is to be started soon.

GREAT NORTHERN.—Plans are being made by this company, it is said, to build a branch from Wenatchee, Wash., up the Columbia river, at a cost of about \$5,000,000.

HAMPDEN RAILROAD.—An officer writes that the company expects to begin work in about 90 days on this 20-mile line, projected from Springfield, Mass., and Holyoke to Bondsville. R. D. Gillett, president, Westfield. (September 23, p. 558.)

HUDSON & MANHATTAN.—It is announced that this company will be operating trains over the new extension from New York to Newark, N. J., about nine miles, by October 1. The underground line is to be connected with the Pennsylvania Railroad about one mile west of Jersey City, from which point the Pennsylvania tracks are to be used to Manhattan Transfer, which is one mile east of Newark. From Manhattan Transfer an independent line will be used to reach a new station at Saybrook place, near Broad street, Newark.

ILLINOIS CENTRAL.—According to press reports this company is laying second track on its western line to accommodate increased business of the Minneapolis, St. Paul & Sault Ste. Marie, which uses the Illinois Central for Chicago entrance. Third and fourth tracks are also being laid south to Madison.

INDIANAPOLIS, CHICAGO & MERIDIAN (Electric).—Incorporated in Indiana with \$100,000 capital and offices at Indianapolis, Ind. The plans call for building a line from Indianapolis north to Sheridan, thence via Flora, Monticello, Francesville, Valparaiso, Hobart, Wheeler, Gary and Hammond, into Chicago, about 175 miles. The directors include: J. C. Billheimer, J. A. Shafer, M. J. Moreland, H. Holton and M. B. Keller.

LEHIGH VALLEY TRANSIT CO.—According to press reports, this company is now at work building two cut-offs, one at Perkaspie, Pa. and another at Sellersville. When these improvements are finished the distance will be shortened about five miles, as compared with the existing line. The work includes putting up a large station at Perkaspie.

LIBERTY-WHITE.—According to press reports, plans are being made to secure right-of-way for the extension which has been projected for some time from Holmesville, Miss., southeast to Tylertown, 12 miles. It is understood that the company will also build an extension from Liberty, west to a point on the Mississippi river.

LOUISVILLE & NASHVILLE.—According to press reports, contracts have been given to the Callahan Construction Company, for double-tracking work and improving the line between Berry, Ky., and Falmouth, on 11 miles. The work involves the excavation of about 300,000 cu. yds., mostly rock, and a considerable amount of concrete masonry work. A contract for similar work on another section has been let to McKinney, Huff & Spradlin, Knoxville, Tenn. This improvement work is to be continued to Cincinnati, Ohio. It is expected that other contracts will be let soon.

MACON, DUBLIN & SAVANNAH.—An officer writes that this company will build two miles of new tracks and will put up a steel bridge with a draw span, also a new freight station, at Macon, Ga. The improvements will cost about \$250,000. Plans for the freight station have not yet been completed.

MEXICO NORTH WESTERN.—The construction plans of this company, which were interfered with by the recent revolution, it is understood, will now be carried out. Work has been continued on the extension between Nueva Casas Grandes, Chihuahua, Mex., and Madera, 121 miles, and this section will soon be finished and put in operation. This will provide a new route between Juarez and Chihuahua, 470 miles. In carrying out the plan of extending the system, a line is to be built from Minaca, west to Tonichi, Sonora, where connection is to be made with the Yaqui River division of the Southern Pacific, about 100 miles, with a branch from this line at El Tigre, Chihuahua, south to the Pacific port of Agiabampo, Sonora, about 125 miles. From a point about 60 miles north of Madera a branch is to be built northwest to Agua Prieta, Sonora, opposite Douglas, Ariz., about 120 miles.

NEW MEXICO ROADS.—The El Paso (Tex.) Coal Company is planning to build a railway, it is said, from Roswell, N. Mex., to the White mountain district, at an estimated cost of \$2,000,000.

NORTHERN PACIFIC.—This company has commenced construction work, it is said, on a line around Lake Union, Seattle, Wash. The line will be an extension from the present tracks to Fremont.

NORTH YAKIMA & VALLEY.—An officer writes that work is now under way on an extension towards Granger, Wash., 17 miles, and track has already been let on 11 miles. The line is being built to carry fruit and other farm products.

PITTSBURGH & LAKE ERIE.—An officer writes regarding the reports that improvements are to be made on the Ferrona branch, that this company has recently taken over one-half control of the above branch and will probably make some improvements, but definite plans have not yet been made for the work.

PORTLAND, EUGENE & EASTERN.—This company will build a line from Eugene, Ore., to Monroe, it is said, to connect with the Corvallis & Alsea.

QUEBEC & GREAT NORTHWESTERN.—The Canadian parliament has passed a bill permitting this company to build from the city of Quebec, Que., westerly to the terminus of the Gatineau Valley branch of the Canadian Pacific, at Maniwaki, thence westerly to New Liskeard, Ont., near the town of Cobalt, continuing west through the silver and gold belts of Porcupine and Montreal rivers and the clay belt to Port Arthur, on Lake Superior. There is to be a branch from Ottawa City to connect with the Grand Trunk Pacific near Lake Abitibi, crossing the main line about 75 miles west of Maniwaki. This branch will be about 300 miles long. The company plans to build, in all, about 1,500 miles, and expects to have most of the survey finished this fall, so as to begin construction work next year. There will be a number of steel bridges and trestles. The line will carry general merchandise, lumber and grain. Phillip O'Reilly, 74 Sparks street, Ottawa, Ont., is the promoter. Dr. R. Chevrier, P. Clarke, E. J. Daly, all of Ottawa, and J. Bourque, Hull, Que., are incorporators.

SACRAMENTO-SIERRA.—An officer writes that rights-of-way have been secured to build from Sacramento, Cal., east into the timber belt of the Sierra Nevada mountains, passing through the Sacramento county fruit district to a point in Eldorado county. Some of the grading work has been finished. J. M. Graham, engineer, Berkeley.

SAN ANTONIO & RIO GRANDE.—This road, which is now in operation from San Juan, Tex., on the St. Louis, Brownsville & Mexico, north to Chapin, 10 miles, is to be extended, it is said, north to Falfurrias, about 60 miles, where connection is to be made with the San Antonio & Aransas Pass. G. C. Moore, Cambridge Springs, Pa., who recently bought ranch lands in that section, is said to be interested in having the extension built.

SAN JOAQUIN DELTA (Electric).—Incorporated in California with \$500,000 capital, to build from Stockton, Cal., west to Antioch, about 30 miles. The directors include: E. L. Wilhoit, L. H. Woods, W. P. Plummer and F. A. West, all of Stockton.

SOUTH ATLANTIC TRANSCONTINENTAL.—Announcement has been made that the promoters have secured \$11,000,000 of French capital to finance this proposed line. The projected route is from the coal fields of Tennessee, via Knoxville, Tenn., Waynesville, N. C., Asheville and Rutherfordton to Southport. C. J. L. Lantry, Chicago, is interested.

SOUTHERN PACIFIC.—This company is said to have started construction work on a branch from Calexico, Cal., west to San Diego, about 100 miles.

TENNESSEE, ALABAMA & GEORGIA.—See Tidewater Development Company.

TEXAS ROADS (Electric).—The Stone & Webster interests, which control the interurban lines between Dallas, Tex., and Denison and Fort Worth, have recently signed a contract, it is said, which will insure the building of a new interurban line from Dallas south to Waxahachie, about 30 miles. It is understood that the work will be started as soon as the right-of-way is secured.

TIDEWATER DEVELOPMENT CO.—This company has been organized in Alabama to take over the property and rights of the

Tennessee, Alabama & Georgia, operating a line from Chattanooga, Tenn., to Gadsden, Ala. Plans are being made by the new owners to build from Tuscaloosa, northeast to Birmingham, about 50 miles, thence to Gadsden, 60 miles. Work has already been started, it is said, between Gadsden and Birmingham. J. M. Dewberry is said to be back of the project.

WICHITA FALLS ROUTE.—An officer writes that contracts are to be let at once to build an extension of the Wichita Falls & Northwestern, from Hammon, Okla., north to Trail, 35 miles. The line will be built to carry cotton, livestock and agricultural products. (May 26, p. 1223.)

WICHITA FALLS & NORTHWESTERN.—See Wichita Falls Route.

WILLAMETTE & MOLALLA.—An officer writes that contracts are to be let in about 60 days to build from the Willamette river, Ore., up the Molalla valley, 12 miles. The company expects to use steam for the motive power, also electric motor cars. Maximum grades will be 0.5 per cent., and maximum curvature 3 deg. There will be two steel bridges about 150 ft. long. The line is being built to carry agricultural and dairy products, lumber and livestock. M. J. Lee, president, and F. Bryant, chief engineer, both of Canby.

RAILWAY STRUCTURES.

CHEWELAH, WASH.—The Great Northern, it is said, will build a new station at Chewelah.

COS COB, CONN.—An officer of the New York, New Haven & Hartford writes that improvements are being made to the power house at Cos Cob. A contract for erecting the power house building has been let to F. T. Ley & Co., Springfield, Mass. The enlarged power house will furnish single-phase current for the operation of the electrified part of the New York division, including the section now operated between Stamford, Conn., and Woodlawn Junction, N. Y., and, in addition, for the Harlem River six-track branch and the New York, Westchester & Boston, a subsidiary now under construction. Three-phase current will be supplied to substations for street railway power and general lighting at Stamford, Conn., Greenwich, Port Chester, N. Y., and Mamaroneck. Full contracts for machinery and apparatus have not yet been awarded.

CUMBERLAND, MD.—According to press reports, the Western Maryland will build a new passenger station at Cumberland. It is expected that the station will be finished about the time the new extension to Cumberland is completed.

DES MOINES, IA.—The Chicago, Burlington & Quincy is preparing to build a large new freight house.

EL SEGUNDO, CAL.—The Atchison, Topeka & Santa Fe Coast Lines will build a station at El Segundo, near Manhattan Beach. It is said that a branch is to be built to that place.

EUGENE, ORE.—The Southern Pacific, it is said, will build a new freight house at Eugene.

FREDERICK, MD.—The Baltimore & Ohio has given a contract to Edward Brady & Sons, of Baltimore, Md., for extensive improvements at Frederick, Md., involving an expenditure of about \$50,000. The plans provide for a modern freight house 200 ft. long and 40 ft. wide, covered with corrugated iron, which will be equipped with rolling steel doors, making 95 per cent. of the sides available for door opening. The new building will be located just north of the present freight house, which was built in 1831, and is to be removed. At the Carroll street end of the building, or west end, there will be an office for the agent, with booths for check clerks. Standard scales will be installed for weighing, and wagon scales will be located next to Carroll street. The new terminal will have a total capacity of 140 cars.

GRAND RAPIDS, MICH.—Construction work on the new Pere Marquette roundhouse, reported in the *Railway Age Gazette* of May 5, is now well under way. The structure will be of brick with concrete foundation, 400 ft. in diameter, containing 43 stalls, and will cost about \$150,000.

HAMMETT, IDAHO.—The Oregon Short Line, it is said, will build a new station at Hammett.

HARTFORD, CONN.—Application has been made by residents of Hartford to the Connecticut Board of Railroad Commissioners to secure the construction of new bridges over the tracks of the Central New England on Edwards and Woodland streets.

KENTON, ORE.—See North Portland, Ore.

KINGSTON, ONT.—Plans have been made by the Grand Trunk, it is said, for building a new passenger station, also a new freight house, at Kingston.

LOS MOLINOS, CAL.—The Southern Pacific has started work, it is said, on a new freight station at Los Molinos.

MACON, GA.—The Southern Railway and the Georgia, Southern & Florida will carry out in the immediate future a project for the enlargement and improvement of the freight handling facilities at Macon. The Southern Railway has bought land as a site for a new freight yard south of the present yards, 600 ft. x 7,000 ft., south of Turpin street, containing about 100 acres. A new yard will be constructed along modern lines, to have a capacity of 750 acres. The Southern Railway and the Georgia, Southern & Florida will have joint freight house and team track facilities at the present site of the G., S. & F. freight terminals. The improvements include putting up a modern outbound freight house, the enlargement of the present inbound freight house, construction of a team yard, with a capacity of 80 cars, an interchange platform and a cotton platform to take care of the business of both companies.

See Macon, Dublin & Savannah under Railway Construction.

NORFOLK, VA.—The Old Dominion Terminal Company, Norfolk, is planning to put up four creosote timber piers at Norfolk. The piers are to be respectively 300 ft. x 60 ft.; 800 ft. x 80 ft.; 800 ft. x 222 ft., and 1,100 ft. x 222 ft. No estimate of the cost has yet been made.

NORTH PORTLAND, ORE.—The Oregon-Washington Railroad & Navigation Company, it is said, will build new freight stations at North Portland and at Kenton.

OAKLAND, CAL.—According to press reports, the Southern Pacific will start work at once removing the old Sixteenth street station preparatory to the construction of a new station at Oakland. The suburban and main line tracks will also be rearranged. (March 31, p. 816.)

PERKASIE, PA.—See Lehigh Valley Transit Co., under Railway Construction.

RUSSELLVILLE, KY.—Work has been started, it is said, on a new passenger station for the Louisville & Nashville, at Russellville. The cost of the improvements will be about \$25,000.

SACRAMENTO, CAL.—A contract has been given by the Northern Electric for the steel work of the bridge over the Sacramento river at M street in Sacramento, to the Duncanson-Harrelson Co., San Francisco, at \$65,795. The Missouri Valley Bridge & Iron Company is pushing work on the piers for this structure. It is expected to have the bridge open for traffic this summer.

SILSBEE, TEX.—The Atchison, Topeka & Santa Fe will erect a six stall roundhouse to cost about \$20,000.

SOUTH CHICAGO, ILL.—The Baltimore & Ohio will build a single leaf, double track Strauss bascule bridge over the Calumet river. The structure will have a span of 235 ft.

STILLWATER, OKLA.—The Atchison, Topeka & Santa Fe, it is said, will build a combined passenger and freight station at Stillwater, for which plans have been approved.

WILKESBARRE, PA.—An ordinance has been passed authorizing the city officials of Wilkesbarre to pay part of the cost of the right-of-way and construction of a steel reinforced concrete combined highway and street railway bridge over the tracks of the Pennsylvania Railroad, the Lehigh Valley and the Central of New Jersey. The bridge is to be built from South Washington street to South Welles street, between South and Ross streets.

In a discussion over the budget of the railways in Alsace, Germany, and Lorraine, it was shown that since 1904 the wages of trainmen have been increased 22.4 per cent., of trackmen 18.9 per cent., of shopmen, mostly paid by the piece, 24.8 per cent.

Railway Financial News.

ATCHISON, TOPEKA & SANTA FE.—See an item in regard to through service in Traffic News.

ATHENS & TELlico.—A press dispatch from Knoxville, Tenn., says that it is reported that on July 1 the Athens & Tellico will be taken over by the Louisville & Nashville and will become a part of the Knoxville division of the L. & N. The Athens & Tellico runs from Athens, Tenn., to Tellico, 24 miles, crossing the main line of the L. & N. at Englewood.

ATLANTIC COAST LINE.—J. P. Morgan & Co., New York, are offering \$3,000,000 Atlantic Coast Line unified mortgage 4 per cent. bonds at 93.

BARTLETT & FLORENCE.—This road has been sold under foreclosure to J. L. Bailey for \$41,000.

BOSTON & MAINE.—The Board of Railroad Commissioners of Massachusetts, in its report to the legislature on the investigation which the legislature asked it to make in regard to the reduction of the B. & M. dividend, says in part: "Under the best and most favorable anticipated conditions the earnings of the Boston & Maine for the year ending June 30, 1911, will be considerably less than the earnings for the year ended June 30, 1910." This result, which speaks for itself, is probably sufficient reason why the dividend has been reduced.

CANADIAN PACIFIC.—This company has sold in London \$6,161,000 additional consolidated 4 per cent. debenture stock. The proceeds of the sale of this stock are to be used to pay for 553 miles of branch lines in Manitoba, Saskatchewan and Alberta.

CHESAPEAKE & OHIO.—See Kanawha & Michigan.

CHICAGO & NORTH WESTERN.—This company has made an application to list \$7,500,000 additional general mortgage 4 per cent. bonds on the New York Stock Exchange.

CHICAGO, MILWAUKEE & PUGET SOUND.—Stockholders have voted to authorize an increase in the capital stock from \$100,000,000 to \$200,000,000. The increase in stock is made necessary by the statutes of Montana, which require the authorization of twice as much stock as bonds of any railway operating in that state.

EUREKA & PALISADE.—A press despatch says that this property has been "redeemed" by the stockholders. The road runs from Palisade, Nev., to Eureka, 84 miles.

GREAT NORTHERN.—J. P. Morgan & Co., the National City Bank and the First National Bank, all of New York, are offering \$20,000,000 of the first and refunding mortgage 4¼ per cent. bonds of May 1, 1911-July 1, 1966, at 102, yielding 4.15 per cent. on the investment. These bonds are part of the total authorized issue mentioned in these columns last week of \$600,000,000 bonds. In addition to the present issue of \$20,000,000 bonds, \$25,000,000 are held in the treasury of the company; \$332,162,000 are reserved to retire existing securities; \$122,838,000 are reserved for general corporate purposes, including the acquisition of new lines and the purchase of stocks and bonds of other companies, and \$100,000,000 are reserved to buy new lines and terminals at not to exceed \$3,000,000 in any one year.

INTERNATIONAL & GREAT NORTHERN.—All the bondholders, with the exception of one holding less than 100 bonds, have deposited their securities under the reorganization plan, and the plan is to become operative when the property is sold on June 13. T. J. Freeman, the receiver, has obtained from the railway commission of Texas approval of a waiver of the customary 60 days' notice of increase of capital stock.

Cummings & Marckwald, who represented the undeposited second mortgage bonds, and who were making preparations to bid against the Goulds at the foreclosure sale on June 13, announce that they have sold all of their bonds to the third mortgage committee, of which Alvin Krech is chairman, at a satisfactory price.

KANAWHA & MICHIGAN.—An initial dividend of 4 per cent. has been declared, payable June 30, on the \$10,000,000 stock of the

Kanawha & Michigan. A majority of this stock is owned by the Chesapeake & Ohio and the Lake Shore & Michigan Southern jointly.

LAKE ERIE & PITTSBURG.—This company has filed a mortgage of \$15,000,000, to run fifty years. Bonds of this new issue will be sold to the extent of about \$7,500,000 to reimburse the Lake Shore & Michigan Southern and the Pennsylvania for the amount so far expended on the line.

LAKE SHORE & MICHIGAN SOUTHERN.—See Kanawha & Michigan.

LONG ISLAND.—This company has made an application to list \$1,600,000 additional refunding 4 per cent. mortgage bonds on the New York Stock Exchange.

LOUISVILLE & NASHVILLE.—J. P. Morgan & Co., the National City Bank and the First National Bank, all of New York, are offering \$10,000,000 Atlanta, Knoxville & Cincinnati division 4 per cent. bonds of 1905-1955 of the Louisville & Nashville at 93½, yielding 4.30 per cent. interest on the investment. These bonds are secured by a mortgage on the entire main line between Cincinnati and Atlanta. On 205 miles of this division they are a direct first mortgage, and on 546 miles they are a mortgage subject to prior lien outstanding at the rate of about \$15,000 per mile.

See also Athens & Tellico.

MAXTON, ALMA & SOUTHBOUND.—This company has taken over the operation of the Alma Railroad and has filed a tariff with the Interstate Commerce Commission taking over all of the tariffs and agreements, etc., of the Alma Railroad.

MISSOURI, KANSAS & TEXAS.—Speyer & Co., New York, have sold to a syndicate of French bankers 100,000,000 francs (\$20,000,000) consolidated mortgage 5 per cent. 30-year bonds of 1910-1940. The bonds are all to be in denominations of 500 francs each.

NARRAGANSETT PIER RAILROAD.—The directors have authorized the lease of the Narragansett Pier Railroad to the Rhode Island Company, a subsidiary of the New York, New Haven & Hartford for a period of 99 years. The Narragansett Pier Railroad is operated by steam, and runs from Narragansett Pier to West Kingston, 8½ miles.

NATIONAL RAILWAYS OF MEXICO.—Gross earnings, which are not given in our table of roads reporting to the Interstate Commerce Commission, for April, 1911, amounted to \$4,763,789, comparing with \$5,780,270 in April 1910. Operating expenses totaled \$3,416,311 this year as against \$3,252,278 last year. Net earnings amounted to \$1,347,479 this year and \$2,527,991 last year.

NEW YORK, NEW HAVEN & HARTFORD.—Two per cent. of the New Haven company's investment in the Grand Central station at New York is to be deducted from the yearly rentals of the office buildings which have been erected over the tracks, and this sum will be made into a sinking fund, with which it is planned eventually to liquidate the entire investment.

ST. LOUIS, BROWNSVILLE & MEXICO.—This company has asked the Texas railway commission for permission to issue \$1,340,000 bonds for improvements on the line now in operation and for the construction of new branch lines totaling 67 miles. These bonds when issued will be pledged under the St. Louis & San Francisco-New Orleans, Texas & Mexico division mortgage.

ST. LOUIS & SAN FRANCISCO.—See an item in Traffic news in regard to through service.

See also St. Louis, Brownsville & Mexico.

The Russians control the railways in the northern part of Manchuria, and the Japanese those in the southern part, together with their termini on the sea, New Chang, Dairen and Port Arthur. China now talks of having one line of its own in its own territory from Kirin, the eastern terminus of a branch of the Charbin-Port Arthur line, east by south to Hun-chun, which is about 90 miles west of Vladivostok on the Ginmeu river, close to the north border of Korea, where navigation to the sea is almost always open. Such a line would be 220 miles long over a difficult country.